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Abstracts Book

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The 3rd Global Health and Innovation Conference 2023

Combating Antimicrobial Resistence:
Strengthening Collaboration and Nurturing Innovation

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ABSTRACTS FOR PLENARY LECTURE AND SYMPOSIUM

DAY 1
PLENARY LECTURE

Plenary Lecture
Dr. J.L. (Jan) Nouwen

TITLE:
Complex Infections, Complex Solutions?

SUBTITLE:
Old & New Modalities in the Treatment of Complex Infectious Diseases including bacteriophages

ABSTRACT:
The rise of antimicrobial resistance (AMR) globally together with the increased use of prosthesis materials and an aging population, makes treatment of infectious diseases more complex every day.
Ofcourse we can debate how to define an infection as complex. It could be the micro-organism alone (resistant or not) making an infection difficult to treat. It could be the host with underlying diseases, multiple co-morbidities and multi-pharmacy making it difficult to treat. And of course it could be the type of infection, biofilm-associated for instance, making an infection difficult to treat. But most of all, it is a combination of these which make infections complex infections!
An interdisciplinary approach, including an infectious disease expert, clinical microbiologist, pharmacist, radiologist and of course surgeon or other medical specialists, is essential to be able to combat complex infections in the best way. The use of new (combinations) of antibiotics and the use of (not so) new modalities like bacteriophages in the treatment of these complex infections, could also play a role in the success of treatment of complex infections, but always as part of an interdisciplinary approach.

Plenary Lecture
Ass. Prof. Hazim Khalifa, DVM, PhD

TITLE:
Challenges of Tricycle surveillance on ESBL-producing E. coli with phenotypic and genotypic characterization

ABSTRACT:
The World Health Organization (WHO) regards antibiotic resistance (AMR) as the biggest challenge to the treatment of infectious diseases. For this reason, Tripartite Collaboration established by the Food and Agriculture Organization (FAO), World Organisation for Animal Health (OIE), and WHO have promoted an efficient, robust, and multisectoral surveillance system which termed "Tricycle Protocol" which describes the implementation of a simplified, integrated, and trans-sectoral surveillance system for bacterial resistance to antibiotics. Therefore, Japan sought to implement this project in Asian countries using funding provided by the Japanese Ministry of Health and supervision provided by the Antimicrobial Resistance Research Centre (AMR-RC). Four major challenges were developed during the application of this project in Asian countries. The challenges include the signing memorandum of agreement with every country, the potential for project implementation in the capital (large) city, project application in three different sectors (human, food chain and environment) in the same city, and the possibility of extending the surveillance to include different emerging pathogens with unique resistance mechanisms. Fortunately, we overcame all the previous challenges and the project is now applied Indonesia and Malaysia, and AMR-RC aims to extend the project in other Asian countries.

DAY 1
SYMPOSIUM

Symposium 1
Prof. Motoyuki Sugai

TITLE:
New national action plan on antimicrobial resistance (AMR) 2023-2027 in Japan-newly implemented actions and strengthening points

ABSTRACT:
Japan formulated the "National Action Plan on Antimicrobial resistance (AMR)(2016-2020)"(NAP2016-2020) on Apr 5, 2016 following the endorsement of a global action plan on AMR on May 2015 by World Health Assembly, which urged member states to develop their own action plan within two years. We had been working in variety of fields on AMR countermeasure for 7 years. Due to the spread of coronavirus infectious disease, emerging in 2019 (COVID-19), the period of NAP2016-2020 has been extended to the end of FY2022. At last, new "National Action Plan on AMR (2023-2027)" has been implemented over the next five years to further promote measures on AMR. The new NAP set goals for six areas like the old NAP and again set numerical targets as outcome indices. I will introduce the new NAP including a new trial of introducing a market incentive mechanism in antimicrobial market in the new NAP2023-2027.

Symposium 1
Prof. Jun Kobayashi, MD., Ph.D

TITLE:
Formulating the Asian network on public health security for targeting the vulnerable population in the post COVID-19 era

ABSTRACT:
The COVID-19 pandemic has clearly shown a lack of preparedness for the next public health emergency when it comes to vulnerable populations including migrants. To include the issues of migration and health in the current global health agenda, it is important to establish/strengthen a network for collaboration among various stakeholders from both the migrant-sending and host countries of migrants. Global migration has been increasing since before the pandemic. In East and Southeast Asia, many mid- to long-term immigrants from countries such as Indonesia and Vietnam have come to Japan, Korea, Taiwan, and Singapore to work as laborers. Recently, many countries in Southeast Asia have become both sending and receiving countries, making migration a complex and growing phenomenon.

Japan Association for Global Health organize the joint conference in March 2023 with academia organization in Korea, Taiwan and Vietnam, and agreed with our goal with five pillars: surveillance and monitoring, risk communications, community engagement, access to health and social protection services, and supportive environments. Considering the transition of context from the COVID-19 crisis to 'Build Forward Better', through the Asian network, we will envisage the better world, where vulnerable populations including migrants will not be left behind from health security.

Symposium 1
Delly Chipta Lestari

TITLE:
Prudent use of antibiotics in surgery

ABSTRACT:
The use of antibiotics in surgery, specifically surgical antibiotic prophylaxis (SAP) or perioperative antibiotic prophylaxis (PAP), is an evidence-based practice aimed at preventing surgical site infections (SSIs) that encompasses a broader set of measures to ensure appropriate administration, timing, dosage, and duration of antibiotics. However, studies have shown that SAP/PAP is often inappropriately used, which may lead to increased healthcare costs, prolonged hospitalization, superinfections, antibiotic resistance, and adverse drug reactions. Five key PAP modalities have been identified to improve compliance with PAP protocols and reduce inappropriate antibiotic usage. These modalities focus on indicators such as compliance with the indication, selection, timing, dosage, and duration of antibiotics, and the frequency of administration by healthcare professionals. Barriers to implementing these modalities include lack of education, psychological barriers, fear of litigation, and inadequate awareness of local antimicrobial resistance patterns. There is no conclusive evidence regarding the methicillin-resistant *Staphylococcus aureus* (MRSA) screening before surgery in the antimicrobial resistance (AMR) era. However, hospitals may implement it alongside other preventive measures. Surveillance systems should be in place to monitor the impact of screening programs. Further research is needed to evaluate the efficacy of MRSA screening and decolonization procedures.

Symposium 1
Prof. Dr. dr. Kuntaman, MS., Sp.MK(K)

TITLE:
Multiple Drug Resistant Organisms (MDRO): Challenges and Opportunity

ABSTRACT:
The crucial steps in infection management are: 1). Clinical diagnosis, is it bacterial or viral; 2). Antimicrobial empirical therapy based on fruitful antibiogram; and 3). Take sample for microbiology diagnosis. Three up to 5 days later should be planning for definitive therapy. The definitive therapy needs a good data of microbiological culture and its susceptibility testing. The availability of antibiogram is an essential. Good antibiogram usually need a best practices in clinical Microbiology. Good Antibiogram usually accommodate any required aspects of data, such as disease/specimen, microbe, susceptibility pattern, location/hospital and time.

Multiple Drug Resistant Organisms (MDRO) is common nowadays in hospital setting, especially in tertiary referral hospital. It is due to the commonly overuse of antimicrobial, in both of the secondary or tertiary hospitals. The program in strengthening Antimicrobial Stewardship Program (ASP) will improve the clinical practices according the antimicrobial use.

A key success for infection management, should be initiated by a true diagnosis clinically, is it the infection bacterial or viral origin. Then, the therapeutic protocol will follow the sequences of clinical judgement or clinical microbiology examination.

The strategy to control AMR is a big challenges. There are two strategies to suppress the increasing of AMR; 1). Endorsement of the rational use of antibiotic by effectively improve the ASP, and 2). Suppressing the bacterial spread through improving the compliance of standard precaution. These strategies are challenges in hospital practices, due to the requirement of the behaviour changes of medical or paramedical staff. In this context, the role of hospital Director and Infection Prevention and Control (IPC) committee are critical points.

AMR control at this moment, is included in the National accreditation of the hospital. It thus the opportunity for the hospital to improve the AMR control, for goals, in both of improving health services in infection management and increasing the compliance for accreditation standard. It also endorses the director in the implementation of AMR Control Program. The AMR control Program also beneficial for hospital management, in increasing the efficiency and effectivity of the health services, especially management of Infection. Thus the hospital management need the endorsement of AMR control for improving the best practices in both of infection management and hospital quality performance.

Symposium 2
Prof. dr. Pratiwi Sudarmono, Ph.D., Sp.MK (K).

TITLE:
Comparation of molecular and conventional method for MDR detection

Author:
Pratiwi Sudarmono, Fera Ibrahim

ABSTRACT:
Emergence of resistance to multiple antimicrobial agents in pathogenic bacteria has become a significant threat to treat infections in patients as there are fewer, or even sometimes no, effective antimicrobial agents available for infections caused by causative bacteria. Gram-positive and Gram-negative bacteria are both affected by the emergence and rise of antimicrobial resistance. Testing is required not only for therapy but also to monitor the spread of resistant organisms or resistance genes throughout the hospital and community.

Traditionally, the presence of bacteria in or on humans during health or disease has been determined by growing the bacteria in culture, and using the Kirby Bauer method we seek for the antibiotic resistance pattern. But this method needs a several days laboratory work, and become unpractical to doctors who must combat the infections in intensive care unit and acute infections. Nowadays, the molecular method is increasingly used even in routine microbiology lab, although must be conducted by trained persons and need additional molecular machineries.

Molecular methods are often used in addition to phenotypic methods but are set to replace them in many laboratories due to the greater speed and accuracy they provide in detecting the underlying genetic mechanism(s) for antibiotic resistant bacteria. Some of the common molecular methods currently used for detection of antibiotic resistant genes include PCR, DNA microarray, whole-genome sequencing and metagenomics, and matrix-assisted laser desorption ionization-time of flight mass spectrometry.

Of the available molecular methods, fully automated, integrated, cartridge-operated polymerase chain reaction (PCR) or loop-mediated isothermal amplification (LAMP) devices are the most suitable for laboratories with no previous experience in molecular testing in AMR surveillance. Molecular AMR diagnostics detect resistance-coding genes or resistance-associated mutations in DNA extracted from purified bacterial isolates or directly from clinical samples. These methods can give much faster results than phenotypic methods, in some cases in a matter of minutes if a cultured bacterial colony is tested directly or within a few hours for clinical specimens. Various molecular tests are available commercially to detect specific resistance genes for both clinical and surveillance purposes.

Symposium 2
Dr. J.A. Juliette Severin

TITLE:
Surveillance of AMR and data for action

ABSTRACT:
Surveillance of antimicrobial resistance can be done on a local, regional, and national level, each with different purposes. It can be done passively, using routinely collected data, or actively, with a planned collection of data that are otherwise unavailable. Several of these are discussed in this presentation. The way the surveillance is organized determines the outcomes and which action can be taken. A continuous, almost real-time, sustained, AMR surveillance strategy with good quality microbiological data would be best. Furthermore, AMR is increasingly considered in a One Health approach, not only looking at human health, but also animal health and the environment.

Symposium 2
Prof. drh. Wiku Bakti Bawono A., M.Sc., Ph.D

TITLE:
Managing pandemics: lesson learned and a multisectoral approach

ABSTRACT:

The covid-19 pandemic has challenged all countries' national health systems. None of their systems were resilient enough to protect their nation from the virus invasion. Indonesia was able to exit from the pandemic when President RI declared the nation's status endemic on June 21, 2023.

The Government of Indonesia, through its Covid-19 Task Force, has applied 5S (Strategy, Structure, System, Speed, and Skill) 1T (Target) as its holistic strategy. In this context, the strategy is to prioritize promotive and preventive actions. Moreover, the 5S 1T strategy is strongly supported by the Penta helix approach involving five important sectors: government, private sector, community, academia, and media. In the midst of this ongoing struggle, collaboration and cooperation between all parties are the primary keys to facing the pandemic potential of emerging infectious diseases.

To move toward a safer future, the multi-sectoral coordination needs to be strengthened, then supported by a cross-sectoral One Health approach, in which we must fully realize the importance of integrating all aspects of human, animal, and environmental health.

Symposium 3
Dr Shukry Zawahir, PhD, MSc, GDipClinEpi, BPharm

TITLE:
Combating the emergence and spread of antimicrobial resistant infectious diseases in Vietnam

ABSTRACT:
There is a paucity of evidence regarding the implementation of antimicrobial stewardship (AMS) programs in community pharmacy settings within Low- and Middle-Income Countries (LMICs). In these settings, antibiotics are frequently utilised inappropriately for self-limiting viral infections, exacerbating the prevailing issue of antimicrobial resistance, which poses a significant threat to public health globally. Our objective was to explore in detail the issues concerning the inappropriate use of antibiotics in both the community settings in Vietnam. Additionally, we assessed the feasibility of implementing AMS specifically within community pharmacy settings in Vietnam. To comprehend the issue of inappropriate antibiotic use within the community settings in Vietnam, we undertook a comprehensive approach. This involved mapping of health facilities, conducting qualitative studies, administering standardised patient surveys, and analysing the health system at the baseline. Furthermore, a pre and post feasibility study focusing on antimicrobial stewardship interventions was carried out specifically within the community pharmacy settings. The inappropriate sale of antibiotics in Vietnam presents a significant issue, influenced by various contributing factors. This study has yielded valuable insights into the feasibility of implementing AMS interventions within community pharmacies in Vietnam and helped improve the antibiotic dispensing practice. In order to ascertain the long-term impact of specific interventions, further research is needed. Which should focus on optimising collaboration between community pharmacies, prescribers, patients, and policymakers. This collaborative approach will be instrumental in achieving optimal outcomes to combat the emergence and spread of AMR in Vietnam and globally.

Symposium 3
Dr. dr. Andani Eka Putri

TITLE:
Projection of the Development of Molecular diagnostic Technology in Indonesia: Today and Future

ABSTRACT:
Innovative approaches to clinical testing are critical to overcome the most significant challenges faced by the health care system today. Central to these efforts is the introduction of new technologies that change the way patients are diagnosed and treated. Innovative molecular diagnostics technologies are critical to overcoming current health care challenges and improving the way patients are diagnosed and treated

Today and future, selection highlights companies taking innovative steps to address some of the most pressing global health concerns, including the COVID-19 pandemic, antimicrobial resistance, and conditions ranging from metabolic diseases to cancer. The importance of being able to quickly and accurately identify pathogens has certainly been highlighted during the COVID-19 pandemic. These ground breaking technologies have the potential to increase efficiency of patient diagnostics, reduce patient morbidity and mortality, and improve overall patient care.

In Indonesia, learning from testing that was developed during the Covid-19 pandemic, the Ministry of health is trying to design policies related to national laboratories. The policy includes fast, efficient, accurate diagnosis at affordable prices, a tiered quality assurance system, surveillance with new approaches, such as molecular and genomic sequencing. The government designed regional laboratory to have competency in molecular and genome sequencing approaches.

Keywords: Diagnostics, innovative, molecular, national laboratory

Symposium 3
Prof. dr. Muh. Nasrum Massi., Ph.D., Sp. MK(K)

TITLE:
Molecular diagnostic in the perspective of clinical service and epidemiology setting

ABSTRACT:
The development of microbiology diagnostics compared to conventional methods has made a significant contribution to the control of infectious diseases in hospitals. Traditional microbiology techniques often require time-consuming processes and have limitations in terms of accuracy and speed. However, with advancements in microbiology diagnostics, particularly molecular-based methods, this field has made remarkable progress. Modern techniques such as polymerase chain reaction (PCR), nucleic acid sequencing, and rapid antigen tests have revolutionized the detection and identification of microbial pathogens, offering greater sensitivity, specificity, and faster turnaround times, enabling healthcare professionals to make timely and accurate diagnoses. This can facilitate rapid and effective disease management as well as infection control measures in hospitals. The use of advanced microbiology diagnostics has enhanced the ability to detect and track infectious diseases, implement appropriate treatment regimens, and prevent the spread of infections. Microbiology diagnostics plays a crucial role in epidemiological settings, aiding in outbreak identification, surveillance, and enabling preventive measures for infection control to be implemented. Overall, the development of microbiology diagnostics has played a vital role in improving disease control in hospitals, offering more efficient and reliable methods for diagnosing and managing infectious diseases.

Keyword: Diagnostic microbiology, Control of infectious diseases, Molecular methods, Timely and accurate

DAY 2
PLENARY LECTURE

Plenary Lecture
He Yuan, PhD

TITLE:
Malditof mass spectrometry for the future diagnostics

ABSTRACT:
What can EXS2600 help on microbiology analysis? Zybio's 4th generation MALDI-TOF hardware, database, software have been omni optimized, one of which is the signal-to-noise ratio is improved 1,000 times better than original generation. Accuracy, resolution and sensitivity are better calibrated and synchronized. Compared with the traditional biochemical identification methods, MALDI-TOF MS technology has triggered a quantum leap in terms of efficiency assurance since it shortens TAT (turn-around-time) by more than 10 times and even increase the identification accuracy 95%+. MALDI-TOF becomes increasingly popular due to its easiness-to-use, ultimate productivity and revolutionary automation efficiency away from tedious labor and material spending. Prompt accurate diagnostic results and proper therapeutic suggestions may save lives.

DAY 2
SYMPOSIUM

Symposium 4
dr. Budi Haryanto, Sp.MK

Symposium 4
dr. I Wayan Agus Gede Manik Saputra, M.Ked, Klin, Sp.MK

TITLE:
The Importance of Identifying the Right Organism for Sepsis Management

ABSTRACT:
Sepsis is a serious and life-threatening clinical condition that arises when the body's response to infection causes injury to its own tissue and organ. As the final common pathway to death for severe infectious diseases, etiology of sepsis including bacterial bloodstream infections, diarrheal disease, lower respiratory tract infections, malaria, dengue, and systemic fungal infections. Sepsis become major global health threat with a high incidence and mortality, particularly in LMICs. Based on WHO data 2017, 48,9 millions of global sepsis cases and 11 million deaths related to sepsis cases. Multidisciplinary approach can be applied in sepsis team care including Microbiology. The purpose of microbiology diagnostic is to identify the etiologic agent of sepsis, to provide antimicrobial susceptibility test, reporting cumulative summaries of antimicrobial susceptibility data as an antibiogram and provide up-to-date clinical microbiologic data for use in the surveillance of nosocomial infections and identification of potential outbreaks. Microbiology diagnostic now a days become challenging on how it can detect the pathogen cause infectious diseases. Modern microbiology diagnostic can be aimed to perform diagnostic stewardship for sepsis. As bacteremia is the most prevalence site origin of sepsis, the fast clinical microbiology testing can be suggested to yield the etiology of sepsis in hours.

Symposium 5
Dr. Hendri Pangestu, Sp.An.,KIC.,MH

TITLE:
Overcoming sepsis in an era of antimicrobial resistance: Practical strategies and consideration in ICU setting

ABSTRACT:
Antibiotic resistance, and, in a broader perspective, antimicrobial resistance (AMR), continues to evolve and spread beyond all boundaries. As a result, infectious diseases have become more challenging or even impossible to treat, leading to an increase in morbidity and mortality. Despite the failure of conventional, traditional antimicrobial therapy, in the past two decades, no novel class of antibiotics has been introduced. Consequently, several novel alternative strategies to combat these (multi) drug-resistant infectious microorganisms have been identified. Mainly due to its extremely vulnerable population of critically ill patients, and the high use of (invasive) procedures, the intensive care unit (ICU) is the epicenter of infections. These infections are associated with an important rise in morbidity, mortality, and health care costs. The additional problem of multidrug-resistant pathogens boosts the adverse impact of infections in ICUs. Several factors influence the rapid spread of multidrug-resistant pathogens in the ICU, e.g., new mutations, selection of resistant strains, and suboptimal infection control.

Symposium 5
dr. Anis Karuniawati, Ph.D., Sp.MK(K)

TITLE:
Multidimensional aspect to prevent spreading of multidrug resistant pathogen

ABSTRACT:
Antimicrobial resistance (AMR) has threatened human and animal health, food safety and food security, economic prosperity and ecosystems worldwide. Regarding the human health sector both in hospital and community setting, non-optimal implementation of infection prevention control, diagnosis stewardship of infectious disease, and antimicrobial stewardship have significant roles in accelerating the increase of antimicrobial-resistant bacteria (AMRB) and/or multidrug resistant organisms (MDRO). AMRB and AMR genes (AMRGs) are released from human-linked reservoirs and polluting the environment. The AMRGs with different level and diversity have been detected in the outlet of waste water treatment plant of some hospitals as well as in the river that crosses one of the big cities in Indonesia. Pet, wild animal, or freshwater fish may also contribute in the dissemination, being a potential vector for AMR spread among geographical area.

The fight against AMR should be conducted comprehensively, through close collaboration across all sectors (horizontal collaboration) and also vertical collaboration, from the subdistrict, district, national level and also regional and international level. The Quadripartite, which consists of the Food and Agriculture Organization of the United Nations (FAO), the United Nation Environment Programme (UNEP), the World Health Organization (WHO) and the World Organisation for Animal Health (WOAH), has been formed since 2022 to tackle the antimicrobial resistance threat.

Infection control in hospital setting, especially in intensive care ward with high prevalence of MDROs, has to make a breakthrough in this regard, for example screening of MDROs colonization using rapid molecular test and mitigation of risk factors in patients on admission to determine the isolation precaution. Hand hygiene and reduction in device use remain to be the low-technology interventions that could have a major impact on nosocomial transmission of antimicrobial-resistant organisms. Although continued research is needed on new and old ways of preventing nosocomial infection, health care workers must persevere in improving adherence with the measures that are known to be effective.

Symposium 6
dr. Leli Saptawati, Sp.MK(K)

TITLE:
Challenging diagnosis of nontuberculous mycobacteria (NTM) infection: Species identification and virulence detection

Author:
Leli Saptawati, Widana Primaningtyas, Paramasari Dirgahayu, Yusup Subagio Sutanto, Brian Wasita, Betty Suryawati, Titik Nuryastuti, Ari Probandari

ABSTRACT:
Nontuberculous mycobacterial (NTM) lung infections are a major public health concern. Diagnosis of NTM-pulmonary disease (NTM-PD) is challenging. Identification at the species level is essential for diagnosis and determination of therapy. This was a descriptive cross-sectional study. NTM isolates were collected from three TB referral centers in Java from January 2020 to May 2021. A total sample of 94 isolates was tested for species identification by using matrix-assisted laser desorption-ionization time-of-flight mass spectrometry (MALDI-TOF MS) (Vitek MS *Mycobacterium*/*Nocardia* Kit, bioMérieux SA, Marcy L'Étoile, France), antibiotics susceptibility and other virulence factors. We found nine groups of NTMs starting from the most, namely: *M. fortuitum* group, *M. abscessus*, *M. intracellulare*, *M. neoaurum*, *M. chelonae*, *M. gordonae*, *M. szulgai*, *M. mucogenicum*, and *M. arupense*. The *M. fortuitum* group showed a higher level of susceptibility, was able to form stronger biofilms ($p < 0.001$), and was able to perform better adhesion and invasion compared to *M. abscessus*. There was no significant difference in the ability to perform sliding motility ($p = 0.57$). Amikacin showed the highest effectiveness against the *M. fortuitum* group and *M. abscessus*. Other antibiotics that are still effective are moxifloxacin, ciprofloxacin/levofloxacin and clarithromycin/azithromycin.*M. fortuitum* group and *M. abscessus* were the most common NTM found in Java, Indonesia. Amikacin has proven to be most effective. Other alternative therapy includes moxifloxacin, ciprofloxacin/levofloxacin and clarithromycin/azithromycin. The ability to form biofilms is directly proportional to the ability to perform adhesion and invasion, but not directly proportional to the ability to perform sliding motility.

Keywords: Nontuberculous mycobacteria; antibiotic susceptibility; biofilm; sliding motility; adhesion; invasion.

Symposium 6
dr. R. Lia Kusumawati Iswara, PhD, Sp.MK(K)

TITLE:
Diagnosis of fastidious microbe

ABSTRACT:
A fastidious organism is any organism that has complex nutritional requirements. Fastidiousness is often practically defined as being difficult to culture. The practical relevance of fastidiousness is that a negative culture result could be a false negative. Clinical microbiology is undergoing a very important evolution. The new diagnostic tools are changing our perception of infectious diseases, which allows testing all possible agents involved when facing a clinical syndrome (pneumonia, meningitis, gastroenteritis). Molecular biology and PCR are now used in diagnostic laboratory in a very functional way. They have allowed the discovery of several clinically important and previously unrecognized or uncultivable pathogens and reduced the dependency of laboratory on culture-based methods. Multiplex PCR has rapidly developed, either as microarrays or as evaluation of several viruses, bacteria, and fungi in one single test. These technologies will rapidly expand, and as their cost will decrease, they will be routinely used even in the smaller clinical microbiology laboratories. When applied wisely and selectively, molecular testing represents and indispensable part of the routine laboratory practice of the clinical microbiologist today. Rapid diagnosis and prompt treatment can reduce hospital length of stay, which leads to decreased hospitalization costs.

ABSTRACTS FOR ORAL PRESENTATIONS

P-001

Risk factors associated with suspected *Clostridium difficile infection* (CDI) in elderly diarrhea patients at Prof. dr. I.G.N.G. Ngoerah Hospital: a preliminary study

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Objectives: *Clostridium difficile* infection (CDI) has been recognized as a typical healthcare-associated infection and contributed to a significant proportion of morbidity and mortality among hospitalized patients. Until present time, anaerobe microbiological laboratory examination has not been able to perform at Prof. Dr. I.G.N.G. Ngoerah Hospital leading to many undetected cases. This preliminary study aims to determine risk factors associated with suspected CDI in elderly diarrhea patients since their vulnerability to immunosenescence.
Methods: The target population of this study were all elderly inpatients with one or several risk factors. Medical records during the year 2017 until 2021 as data source were further analysed with total of 70 samples who met inclusion criteria by purposive sampling technique.
Results: 100% of all samples have a history of hospitalization ε 48 hours, 53 patients (77.1%) had a history of using antibiotic, 26 patients (37.1%) had a history of using proton pump inhibitors (PPIs), 66 patients (94.3%) had a history of chemotherapy, 66 patients (94.3%) had a history of urinary tract infections, 6 patients (8.6%) had a history of chronic kidney disease, 7 patients (10%) had a history of myocardial infarction, 7 patients (10%) had a history of vascular disease, 11 patients (15.7%) had a history of diabetes mellitus.
Conclusions: Risk factors associated with suspected CDI in elderly diarrhea patients at Prof. Dr. I.G.N.G. Ngoerah Hospital were hospitalization ε 48 hours; use of antibiotic and PPIs in the last few months; decreased immune system; history of urinary tract infection, chronic kidney disease, myocardial infarction, vascular disease, and diabetes mellitus.

Keywords: *Clostridium difficile* infection (CDI); risk factors; elderly

P-007

Sequence analysis of the *Spike, RNA-dependent RNA polymerase,* and *protease* genes reveals a distinct evolutionary pattern of SARS-CoV-2 variants circulating in Yogyakarta and Central Java provinces, Indonesia

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Objectives: Since the emergence of SARS-CoV-2, the resurgence of infection cases was due to the development of novel variants of concern. Thus, genomic surveillance is essential to monitor continuing evolution of SARS-CoV-2 and to track the emergence of novel variants. In this study, we performed phylogenetic, mutation, and selection pressure analyses of the *Spike, RNA-dependent RNA-polymerase (RdRp), nsp3,* and *nsp5* genes of SARS-CoV-2 isolates circulating in Yogyakarta and Central Java, Indonesia from May 2021 to February 2022 (n=352).
Methods: We conducted whole-genome sequencing of SARS-CoV-2 for PCR-positive samples with a Ct value of ≤30. Various bioinformatics tools (phylogenetic, mutation, clockrate, selective pressure, and mutation effect analyses) were employed to investigate the evolutionary dynamics of distinct SARS-CoV-2 isolates.
Results: During the study period, 213 and 139 isolates of Omicron and Delta variants were identified, respectively. High frequency (hotspot) mutations (>10%) were identified in all genes studied. Particularly in the *Spike* gene, amino acid substitutions were significantly more abundant in Omicron than in Delta variants. Consistently, in all of four genes studied, the substitution rates of Omicron were higher than that of Delta variants, especially in the *Spike* and *RdRp* genes. In addition, selective pressure analysis revealed several sites that were positively selected in particular genes, implying that these sites were functionally essential for SARS-CoV-2 evolution.
Conclusions: Our study demonstrated a distinct evolutionary pattern of SARS-CoV-2 Delta and Omicron variants. This study provides more insights on genetic variability of SARS-CoV-2 Delta and Omicron variants, particularly those circulating in our regions (Yogyakarta and Central Java, Indonesia).

Keywords: Delta variant; Omicron variant; protease; RdRp; SARS-CoV-2; Spike

P-054

Molecular identification of non-tuberculous mycobacteria using *sodA* and *ITS 16s-23s rRNA*

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Objectives: Several studies have shown that the level of NTM species isolation is increasing worldwide and rapidly becoming a major problem in public health. Therefore the identification of NTM bacteria at the species level is an urgent necessity these days because the treatment is based on the specific species of NTM as the etiology of the infection.
Methods: Thirty-four frozen clinical isolates of suspected NTM were extracted, amplified, and sequenced using *sodA* and *ITS 16S-23S rRNA* (*ITS*) target genes. GenBank database was utilized to analyze and identify the sequencing result at the NCBI.
Results: Classifying to the group/complex sequencing results amplification using the *sodA* and *ITS* fragment showed *M. fortuitum* complex was the most numerous (34.78%), followed by *M. abscessus* complex (17.39%). There were four discrepancies, five isolates of *M. tuberculosis* species, and one isolate remained unidentified. From this study, an algorithm for the identification of NTM species using the *sodA* gene and *ITS* fragment was composed.
Conclusions: This study showed the distribution of NTM species causes lung infection in West Java and was expected to raise awareness of TB-like infection as well as develop new strategies to develop better diagnosis and appropriate treatment.

Keywords: NTM; *sodA* gene; *ITS* fragment; gene sequencing; species identification

P-056

Detection Capsule Serotype of *Streptococcus suis* isolated from clinical specimens using MULTIPLEX-PCR (M-PCR)

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Objectives: Bacterial meningitis is still a worldwide problem, mainly caused by *Streptococcus suis*, a zoonotic agent. Meningitis caused by *S. suis* has been reported as the most case in the West Pacific and Southeast Asia. This bacterium can cause systemic infection in humans and pigs with high morbidity and significant mortality. Serotype 2 is the most common cause of human disease, followed by serotype 14 and serotype 1. Likewise, serotypes 4, 5, 16, and 24 have also been reported. This study aims to determine the serotype of the *S. suis* capsule using Multiplex-PCR technique.
Methods: This study used 41 non-duplicative stock isolates of *S. suis* isolated from clinical specimens at the Clinical Microbiology Laboratory of Prof. Dr. I.G.N.G. Ngoerah Hospital in 2018-2020 that met the inclusion criteria, followed by Multiplex-PCR (M-PCR) examination. The primers used were specific for serotypes 1 to 15 divided into three groups of Multiplex-PCR examination.
Results: This study found that 40 isolates (97.6%) were Serotype 2 and one isolate (2.4%) was non-typeable. Non-typeable serotypes could be serotypes other than the specific primers used, such as serotypes 16 and 24. The result is supported by previous research that serotypes 2 and 1/2 are the most common serotypes that cause infection in humans.
Conclusions: This multiplex-PCR method is one of the examination modalities that can be used to detect *S suis* serotypes from clinical specimens.

Keywords: Capsule serotypes; Multiplex-PCR (M-PCR); *Streptococcus suis*

P-075

Correlation between Thai-LEPTO score with Lateral Flow (LF) and Microscopic Agglutination Test (MAT) results in leptopsirosis patients

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Objectives: Leptospirosis is a disease caused by bacteria belonging to the genus *Leptospira*. The clinical symptoms and signs of leptospirosis often are nonspecific, and easily mistaken for other major infectious diseases. The neglected status of the disease is due at least in part to the limited accuracy and accessibility of diagnostic approaches. This study aims to determine the correlation between Thai–LEPTO Score with Lateral Flow (LF) and Microscopic Agglutination Test **(**MAT) results in Leptospirosis patients.
Methods: Samples were colleted from hospitalized patients with clinical diagnosis of Leptospirosis in Dr. Kariadi Hospital, during 2021 to 2022. Clinical diagnosis was perfomed by using Thai-LEPTO Score. Data of patients to calculate Thai-LEPTO Score was taken from Electronic Medical Record (ERM). Samples were examined by using Lateral Flow (LF) and Microscopic Agglutination Test **(**MAT for diagnostic approach. Completed data of Thai-LEPTO Score, LF and MAT were analysed correlation by using SPSS programme.
Results: A total of 47 samples of hospitalzed patients were collected from January 2021 - December 2022 with completed data of Thai-LEPTO Score, LF and MAT. All patients consist of 21.3% female (10 /47) and male 78.7% male (37/47). By usingThai-LEPTO Score, patient with diagnosed presumtive Leptospirosis was 93.6% (44/47) and negative leptospirosis was 6.4% (3/47). Positive LF from all patients included was 34% (16/47) and 66% (31/47) was negative. Confirm MAT was 48.9% (23/47) and negative MAT was 51.1% (24/47). Pearson correlation between Thai-LEPTO Score with LF was 0.227. Pearson correlation between Thai-LEPTO Score with MAT was 0.536.
Conclusions: MAT has higher correlation with Thai-LAPTO score than LF.

Keywords: Thai-LEPTO Score; Lateral Flow; MAT

P-079

Comparison of DNA extraction modification using QiAamp DNA mini kit vs boiling methods for *m. tuberculosis* isolate

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Objectives: The innovation of commercial DNA extraction kits and the application of molecular technology have recently been utilized our understanding of microbial genomic. DNA extraction is thought to be a crucial step for molecular methods like Polymerase Chain Reaction. Today, a variety of techniques and commercial kits are offered for this purpose. The aim of this study was to compare modification of QiAamp DNA mini kit and, a cheap, rapid, non-commercial method, the boiling method for extraction *Mycobacterium tuberculosis* iolate
Methods: Both experimental protocols were applied on ten mycobacterial isolates from TB patients and being compared. The results were evaluated first by evaluating the extracted DNA's purity and concentration with a spectrophotometer, then by electrophoresis to ensure the DNA's integrity, and finally by PCR-amplification result.
Results: The process of boiling was shown to be more effective, easy, affordable, and acceptable for PCR amplification for all of these isolates. The mean purity of DNA A260/280 by modification QiAamp DNA mini kit and boiling were 1,48 and 1,76. and the DNA yield were 22,8 and 116,39 ug/ml respectively
Conclusions: Boiling method for *Mycobacterium tuberculosis* isolates DNA extraction is a promising method that should be further explored in order to be validated.

Keywords: *M. tuberculosis* DNA extraction; modification of QiAamp; boiling method; Polymerase Chain Reaction.

P-096

The effect of the type of COVID-19 vaccines on the neutralization response

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Objectives: To deal with the Coronavirus disease 2019 (COVID-19) outbreak in the last 2 years, hundreds of vaccines have been developed. These vaccines use various technologies, such as inactivated vaccines, mRNA, virus vectors, and recombinant proteins. The method of evaluating the effectiveness of the vaccine in vitro can be conducted by the Neutralization test. This study aims to compare the effect of the type of vaccine on the neutralization response in post-vaccination serum samples.
Methods: We conducted a neutralization test on 1,465 serum samples from a serosurvey collection conducted by the Ministry of Home Affairs and the Ministry of Health for the period October - November 202. The samples were divided into four groups: the group with a history of COVID-19 infection without the vaccine, the group with inactivated vaccine, the group with the viral vector vaccine, and the group with the mRNA vaccine. The proportion of samples with negative and positive neutralizing antibodies (NAb) was then compared. A serum neutralization test was performed using an electro-Chemiluminescence Immunoassay (eCLIA, Lifotronic eCL8000 eCLIA System).
Results: There is a significant difference in the proportion of samples with NAb (-) and NAb (+) between each group ($p<0.001$). The group with the mRNA vaccine had the highest proportion of NAb (+), namely 92.42%, while the group with the inactivated vaccine had the lowest proportion of NAb (+), namely 83.13%.
Conclusions: In conclusion, the mRNA vaccine showed the highest effectiveness, while the inactivated vaccine showed the lowest effectiveness.

Keywords: NAb; eCLIA

P-108

Interferon-ɣ (QIAreach™ ®) tests compatibility to GeneXpert® MTB/RIF for lung tuberculosis diagnosis in children

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Objectives: Tuberculosis poses a significant health problem in Indonesia, with high prevalence rates reported across the country. Indonesia ranks second globally in reported TB cases, and there has been a notable rise in paediatric TB cases from 42,187 in 2021 to 100,726 in 2022. Diagnosing tuberculosis in children presents challenges due to limited diagnostic tools and inadequate reporting systems. Inadequate specimens' collection and paucibacillary TB cases in children, requiring more sensitive diagnostic methods to ensure accurate results. One commonly used diagnostic approach for paediatric patients is the TB scoring system, which incorporates a tuberculin test. Interferon-γ release assay (IGRA) is another widely-used diagnostic tool that is more specific than tuberculin tests. However, it requires sophisticated laboratory facilities which may not be available in certain areas. To address this, we conducted a compatibility study to assess the performance of a new portable IGRA device called QIAreach™, in comparison to GeneXpert® MTB/RIF tests, for diagnosing paediatric TB.
Methods: This descriptive, analytical study was carried out at Cipto Mangunkusumo Hospital in Jakarta and involved children aged 5 to 18 years with suspected pulmonary TB.
Results: Of 45 patients meeting the inclusion criteria and undergoing both tests, QIAreach™ exhibited a sensitivity of 100% and specificity of 69.4%, with a positive predictive value of 40% and a negative predictive value of 100%. The high sensitivity indicates that this test could be used effectively for TB screening, while the low PPV suggests that positive results need to be confirmed by additional diagnostic tests, as QIAreachTM cannot distinguish between active and latent TB infections.
Conclusions: In conclusion, QIAreachTM provides an additional consideration for diagnosing pediatric TB in Indonesia, as it demonstrates high sensitivity and acceptable specificity when compared to GeneXpert® MTB/RIF.

Keywords: pediatric tuberculosis; *interferon-γ release assay*; diagnosis; QIAreach™

P-112

The differences between gene expression of tryptophan-aspartate containing coat protein at the infection period of tuberculosis patients.

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Objectives: *Mycobacterium tuberculosis* (MTB) is known as an intracellular pathogen that survives inside phagosome of the host macrophage. Several host factors are involved in this process, one of them is tryptophan aspartate containing coat protein (TACO). The presence of TACO plays an important role in inhibiting the fusion of phagosomes and lysosomes. While treatment of TB takes at least 6 months, this study intended to know how the role of TACO is during TB treatment process. This study aims to determine the difference of TACO expression on the surface of the phagosome membrane during TB treatment process.
Methods: Messenger RNA (mRNA) expression was measured using a PCR Light Cycler 2.0 machine to study TACO expression in 3 different groups, namely new pulmonary TB patients, TB patients after 2 months of treatment, and TB patients after 5 months of treatment. The immunocytochemistry tests have been done for the confirmation.
Results: Twenty-seven samples of the peripheral blood monocyte cells (PBMCs) were divided into 3 groups. There were significantly differences to TACO expression between new TB patients, TB patients after 2 months of treatment, and 5 months of treatment. However, there were no significantly differences among the two groups of treated patients.
Conclusions: Tryptophan aspartate containing coat protein expression varies during TB infection because MTB has a very complex self-defense mechanism against host natural immunity which in this case is macrophages. Thus, this research revealed that is still unclear that MTB which is living in the phagosome only uses TACO expression to avoid phagolysosome fusion in the macrophages.

Keywords: TACO; RT-PCR; MTB; phagosome; fusion

P-116

Opportunistic fungi that caused fungaemia among HIV Patients in H. Adam Malik Hospital Medan

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Objectives: Opportunistic fungal infections are common in HIV infections and, along with the severity of the immune deficit, can be an early indicator of HIV infection and have prognostic value. The goal of this study was to identify opportunistic fungi in blood samples from HIV/AIDS patients at H. Adam Malik Hospital in Medan. A cross-sectional approach was used in this observational analytic study.
Methods: The study sample consisted of blood samples from HIV patients who met the inclusion criteria and were treated in the inpatient room and at the VCT polyclinic of H. Adam Malik Hospital in Medan. Blood specimens that grew in BacT/Alert FA Plus bottle were subculture on Sabaroud Dextrose Agar media and incubated for 4 weeks at 25°C and 37°C. The growing yeast colonies were identified using the VITEK 2 system. Mold colonies were identified using colony morphology and microscopy with Lactophenol Cotton Blue staining.
Results: (22.6%) fungal isolates were found among the 31 subjects who underwent blood culture, while 77.4% (24/31) of blood specimens did not show fungal growth. Five (16.1%) *Penicillium marneffei*, one (3.2%) *Cryptococcus laurentii*, and one (3.2%) *Histoplasma capsulatum* were isolated. Weight loss (100%), oral ulcers (85.7%), cough (71.4%), skin lesions (57.1%), CD4+ levels <100 cells/ul (100%), and antiretroviral therapy (71.4%) were all characteristics of HIV/AIDS patients with fungaemia.
Conclusions: *Penicillium marneffei*, *Cryptococcus laurenteii*, and *Histoplasma capsulatum* were isolated from HIV/AIDS patients blood samples at the H Adam Malik Hospital in Medan.

Keywords: Adam Malik Hospital; fungaemia; HIV; opportunistic fungi

P-139

Laboratory spectrum and antibiotic resistance profile of melioidosis association with patient outcomes

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Objectives: Melioidosis, caused by *Burkholderia pseudomallei*, poses challenges in estimating cases, especially in Asian countries. Mortality rates can reach up to 42%. Although there is some data available on the risk factors and outcomes of the infection, there is a need for more information regarding the laboratory tests associated with patient outcomes. This study aims to examine diagnostic investigations, antibiotic resistance profiles, and their correlation with patient outcomes in melioidosis cases in Pekanbaru, Riau Province, Indonesia.
Methods: Medical and laboratory records of melioidosis patients from two tertiary hospitals between 2009 and 2021 were reviewed. The Chi-squared test was used to determine factors associated with mortality.
Results: Among the 68 patients with positive *B. pseudomallei* culture results, various laboratory findings were observed, including anemia (54.5%), decreased haematocrit levels (46.5%), leukocytosis (72.7%), elongated ESR (89.5%), hyperglycemia (61.0%), hypoalbuminemia (85.2%), increased creatinine (31.7%), elevated BUN (76.9%), increased ALT (57.5%) and aspartate aminotransferase (52.6%) levels, and hyponatremia (76.7%). The mortality rate was 46.6%. Selected antibiotics showed sensitivity rates of meropenem (85.5%), cotrimoxazole (87.0%), and ceftazidime (81.5%). High alanine transaminase (ALT) levels were significantly associated with mortality (OR: 6; 95% CI: 1.274-28.254).
Conclusions: A high ALT level may serve as a useful marker for identifying melioidosis patients at higher risk of mortality. Early recognition of illness severity based on this laboratory parameter could potentially lead to improved patient outcomes. Further research is required to explore additional risk factors and establish effective management strategies for this severe infection.

Keywords: Melioidosis; *Burkholderia pseudomallei*; laboratory investigation; antibiotic-resistant

P-142

Bacteriological profile and antibiotic sensitivity pattern in chronic supurative otitis media at Nusa Tenggara Barat province hospital

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Objectives: Chronic suppurative otitis media (CSOM) is still an infectious disease with a high prevalence in Indonesia. One of the main therapies for eradicating middle ear infections in CSOM is antibiotics. However, inadequate antibiotic treatment, inappropriate antibiotics and poor patient compliance have resulted in changes in the sensitivity of the causative bacteria to antibiotics and the development of resistance to commonly used antibiotics. This study aims to determine the bacterial profile and also the pattern of antibiotic sensitivity to the causative bacteria in CSOM patients.
Methods: This study was a cross-sectional study of medical record data of patients who were clinically diagnosed with CSOM at the Ear, Nose and Throat Polyclinic of the Nusa Tenggara Barat Provincial Hospital for the July-December 2022 period.
Results: There were 28 patients with pathogens that could be isolated and tested for sensitivity and resistance to antibiotics. The most isolated organisms were *Pseudomonas aeruginosa* (42.9%) followed by *Klebsiella aerogenes* (14.3%) and *Staphylococcus haemolyticus* (14.30%). *Pseudomonas aeruginosa* showed maximum sensitivity to chloramphenicol, clindamycin, erythromycin, linezolid, oxacillin, rifampin, and vancomycin 100% each, followed by meropenem (89.9%), piperacillin (87.5%), amikacin (85.7%), gentamycin (78.8%), ceftazidime (71.4%) and ciprofloxacin (66.7%); but resistant to amoxycillin-clavulanic acid, ampicillin, ampicillin-sulbactam, cefazoline, cefotaxime, and penicillin-G each 100% followed by Tetracyclin (66.7%), aztreonam and trimetrophrim-sulfametaxazol each (62.55%). *Klebsiella aerogenes* showed sensitivity to erythromycin, gentamycin, levofloxacin, meropenem, piperacilin trimetrophrim-sulfametaxazol each 100%; and resistant to amoxycillin-clavulanic acid, ampicillin, cefepime, ofloxacin respectively (100%) followed by cefotaxime (66.7%). And *Staphylococcus haemolyticus* showed sensitivity to clindamycin, linezolid, tetracyclin and trimetrophrim-sulfametaxazol each 100%, followed by rifampin and vancomycin each 75%; resistant to ampicillin, levofloxacin and penicillin-G each 100%.
Conclusions: The most frequently isolated organisms were *Pseudomonas aeruginosa* (42.9%) and ciprofloxacin which were the most widely used topical agents showing increased resistance to organisms common in CSOM. Therefore, every case of CSOM must be studied bacteriologically to formulate a local antibiotic policy for the proper use of antibiotics so as to help control organisms that are resistant to commonly used antibiotics.

Keywords: bacteriology; antibiotics; chronic suppurative otitis media; sensitivity; resistance

ABSTRACTS FOR OFFLINE POSTER EXHIBITION

P-003

Prevalence and antibiotic susceptibility pattern of extended-spectrum b-lactamase producing *Escherichia coli* and *Klebsiella pneumoniae* from Intensive Care Unit Prof. Dr. I.G.N.G. Ngoerah General Hospital Denpasar in 2020 – 2022

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Background: *Enterobacteriaceae* producing Extended Spectrum Beta Lactamase (ESBL) is a group of bacteria that produces an enzyme that hydrolyzes beta-lactam antibiotic. *Escherichia coli* and *Klebsiella pneumoniae*-producing ESBL become an issue in infectious disease management, especially hospital-acquired infection. *E. coli* and *K. pneumoniae*-producing ESBL affect the effectiveness of antibiotic therapy, prolong hospitalization, and caused higher mortality rates.
Objectives: The aim of this study is to elaborate on the prevalence and resistance pattern of *E. coli* and *K. Pneumoniae*-producing ESBL that can be used for consideration in empirical therapy guideline.
Methods: This cross-sectional study was conducted at the Clinical Microbiology Laboratory of Prof. Dr. I.G.N.G Ngoerah Hospital Denpasar. Total of 1582 specimens was collected from intensive care unit, from 1 January 2020 to 31 December 2022. Isolation and identification of ESBL-producing bacteria were detected by VITEK-2 Compact (BioMerieux). Then the data were analyzed using WHOnet 2020.
Results: *E. coli* producing ESBL was found 66.9% from all *E. coli* isolate (158/236) and *K. pneumoniae* producing ESBL was found 66.7% from all *K. pneumoniae* isolate (236/354).
Conclusions: This prevalence was found to increase year to year during 2020 to 2022. *E. coli* producing ESBL was shown resistance to beta lactams antibiotics except carbapenems, aminoglycoside, and floroquinolons and *K. pneumoniae* producing ESBL was shown resistance to beta lactams antibiotics except carbapenems, aminoglycoside, tetracyclines, and floroquinolons.

Keywords: antibiotic, ESBL, *Escherichia coli, Klebsiella pneumoniae*

P-004

Antibiotic susceptibility pattern of *Acinetobacter baumannii* isolated from sputum specimens in Prof. Dr. I.G.N.G Ngoerah General Hospital during 2020 – 2022

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Background: *Acinetobacter baumannii* is a Gram-negative bacterium which is involved in healthcare-associated respiratory tract infection. It is often caused by increasing use of broad-spectrum antibiotics. Empirical therapy selection requires local antibiogram data.
Objectives: This study aimed to determine the antibiotic susceptibility pattern of *A. baumannii* isolated from various sputum specimens.
Methods: This study was a retrospective descriptive study. Bacterial identification and antibiotic susceptibility test were performed using Vitek-2 Compact System (bioMérieux→, France) in Clinical Microbiology Laboratory of Prof. Dr. I.G.N.G Ngoerah General Hospital. The data were collected for 3 years during 2020 – 2022.
Results: A total of 578 *A. baumannii* isolates were isolated from all sputum specimens during 2020 – 2022. All the antibiotics tested did not show good susceptibility patterns. However, *A. baumannii* isolates were still quite sensitive to Amikacin, Trimethoprim/Sulfamethoxazole, and Tigecycline. Of the three antibiotics, only Amikacin that showed an increased susceptibility pattern during 2020 – 2022, which were 68%, 69%, and 70% respectively. Meanwhile, the sensitivity of *A. baumannii* isolates to Trimethoprim/Sulfamethoxazole in 2021 and to Tigecycline in 2020 were quite good which were 72% and 75%, respectively. However, both of them showed a reduced susceptibility pattern in 2022, which were 71% and 55%, respectively.
Conclusions: Amikacin, Trimethoprim/Sulfamethoxazole, and Tigecycline can be considered as empirical therapy for respiratory tract infection cases which is suspected to be caused by *A. baumannii* based on the antibiogram data.

Keywords: sputum, *Acinetobacter baumannii*, susceptibility pattern, antibiogram

P-006

Wound dehiscence remains a problem in the 21th century: Microbial and antimicrobial susceptibility pattern

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Background: Healthcare-associated infections (HAIs) remain a serious public health issue in Indonesia. One of the HAIs is wound dehiscence which is related to Surgical Site infections (SSIs) according to CDC. Surgical site infection (SSI) is the most common postoperative complication worldwide. Besides, SSI is the most surveyed and most frequent type of infection in low- and middle-income countries.
Objectives: This retrospective descriptive study was conducted to describe a microbial pattern in Prof. dr. I.G.N.G. Ngoerah General Hospital from January 2022 to December 2022.
Methods: The study group comprised all patients who underwent surgery and were diagnosed with wound dehiscence and SSI. The specimens were obtained from the patient's specimen which was sent to the Microbiology laboratory at Prof. dr. I.G.N.G Ngoerah General Hospital. Bacterial identification and antimicrobial susceptibility test were performed using automatic Vitek 2 Compact System (Biomérieux). Data of patients were retrieved from the medical records of Prof. dr. I.G.N.G. Ngoerah General Hospital.
Results: Out of the 56 samples, 47(84%) were positive on culture. Of the 47, the majority of the isolates were Gram-negative (80%) with *Pseudomonas aeruginosa* (21.4%) and *Escherichia coli* (21.4%) being the most common isolated. Males are more likely to develop wound dehiscence (63%).
Conclusions: The most common age group was below 40 years old (37%). Amongst the isolated bacteria exhibited the highest susceptibility to amikacin (82%) and followed by meropenem (80%).

Keywords: Wound dehiscence, surgical site infection, microbial pattern

P-008

Neglected tropical disease-chromoblastomycosis: Treatment failure with oral terbinafine and itraconazole combination

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Background: A Neglected Tropical Disease (NTD)-Chromoblastomycosis (CBM) is a chronic progressive cutaneous fungal infection caused by several naturally melanized or brown-pigmented fungi. Diagnosis is quite easy with KOH staining, and treatment success is higher if diagnosed early.
Case presentation: A 19-year male with multiple plaques and verrucous nodules on the right upper arm, accompanied by pain and itching. The lesions occur in childhood and are slow progressive. The patient previously diagnosed as lymphangioma, and had undergone excision surgery 4 years ago, but a year later, new lesions appeared and multiplied. On physical examination, there were multiple plaques and nodules in the region of the brachialis, axilla, and scapula dextra. The size of the verrucosa plaque varies from erythematous to hyperpigmented, with exudate and no grain visible. Later it was diagnosed as chromoblastomycosis based on the identification of muriform-sclerotic bodies. The patient was treated with an antifungal combination (itraconazole-terbinafine) and heat therapy. After 6 months of treatment, the lesions persisted.
Discussion: CBM is frequently misdiagnosed clinically because of its polymorphic clinical presentation. CBM requires laboratory confirmation via direct mycological examination and/or histopathology. The presence of muriform cells in clinical specimens is required for the diagnosis of this disease. Management consists of long courses of antifungal chemotherapy often combined with physical treatments such as surgery, cryotherapy, and thermotherapy.
Conclusions: CBM should be considered in the differential diagnosis of persistent cutaneous infections. Early diagnosis and appropriate treatment can improve the patient's quality of life.

Keyword: Neglected Tropical Disease, Chromoblastomycosis

P-009

The effect ofloxacin in eradicating biofilms of clinical isolates of *Pseudomonas aeruginosa* causing CSOM at RSUD Dr. Soetomo Surabaya

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Background: The presence of biofilms is often associated with chronicity of infection, recurrent infections and antibiotic resistance. Biofilms are thought to be one of the causes of therapeutic failure in chronic suppurative otitis media (CSOM) infection. CSOM is characterized by purulent discharge through the perforated tympanic membrane for more than 12 weeks either intermittently or persistently. *Pseudomonas aeruginosa* is one of the Gram-negative rod bacteria that cause CSOM which has the ability to form biofilms.
Objectives: To determine the effectiveness of ofloxacin in biofilm eradication of clinical isolates of *Pseudomonas aeruginosa* causing CSOM in vitro.
Methods: This study was a laboratory experimental study conducted at the Clinical Microbiology Laboratory of Dr. Soetomo General Hospital Surabaya. Specimens were identified using BD Phoenix™ and isolates were 12 replicates. The effectiveness of ofloxacin eradication against biofilm was carried out by microbroth dilution method using 96 well microplates. The concentrations of ofloxacin used were 2 mg, 4 mg and 6 mg.
Results: The mean biofilm eradication effect of *Pseudomonas aeruginosa* clinical isolates causing CSOM exposed to ofloxacin was highest at concentrations of 6 mg (65.86%), 4 mg (58.12%) and lowest at concentration of 2 mg (44.14%), but the total biofilm eradication effect was still not achieved.
Conclusions: There are differences in the eradication of *Pseudomonas aeruginosa* biofilms on the administration of ofloxacin with concentrations of 2 mg, 4 mg and 6 mg in vitro. Ofloxacin exposure concentrations above 6 mg are needed for optimal eradication of *Pseudomonas aeruginosa* biofilms that cause CSOM.

Keywords: *Pseudomonas aeruginosa*, ofloxacin, biofilm, chronic suppurative otitis media

P-012

Multidrug resistant isolates of *Escherichia coli* from urine specimens at Prof. dr. I.G.N.G Ngoerah Hospital in 2022

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Background: *Escherichia coli* is the gram negative bacteria and commonly cause urinary tract infections. According to a study conducted in India, 68.3% *E. coli* was found in urine specimens. According to study conducted by Haque,et.al, 82.5% of isolates *E.coli* in urine specimens were classified as MDR. According to the European Centre for Disease Prevention and Control (CDC), multi-drug resistant (MDR) is defined as non-susceptibility to at least one agent in three or more antimicrobial categories. Multidrug-resistant *E.coli* has become a significant public health threat.
Objectives: To determine the prevalence of MDR *E. Coli* and characteristics of antibiotic resistance isolates *E.coli* in urine specimens at Prof. dr. I.G.N.G Ngoerah hospital in 2022.
Methods: A retrospective descriptive study was conducted at Clinical Microbiology Laboratory of Prof. Ngoerah Hospital from Januari - Desember 2022. The samples were collected from Microbiology laboratory's register and the VITEK-2 Compact (BioMerieux®, France) and analyzed using Microsoft Excel 2019.
Results: A total of 304 isolates *E.coli* from urine specimens, MDR *E. Coli* were present in 219 (72%). The results showed that 86.76% resistance to cefazolin , 86.51% resistance to amikasin, 82.05% resistance to cefoperazone, 81.94% resistance to ciprofloxacin, 72.37% resistance to ceftriaxone, 62.5% resistance to cefuroxime and 46.86% resistance to levofloxacin.
Conclusions: The highest resistance of isolates *E.*coli to antibiotics was found in Cefazolin antibiotics and the lowest resistance was found in the antibiotic Levofloxacin. Multi-drug resistances *E.coli* was an infection that required complex treatment.

Keywords : *E. Coli*, Multi-drug resistance, Urinary tract infection

P-014

Mucormycosis in diabetic ketoacidosis patient: A case report

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Background: An emerging fungal disease known as mucormycosis is caused by fungi belonging to the order Mucorales. Globally, diabetes mellitus is the most prevalent underlying condition. Early diagnosis aims to provide appropriate therapy and prevent complications.
Case Presentation: A 25-year-old female with uncontrolled diabetes mellitus with symptoms of gradual declining consciousness, shortness of breath, and fever was submitted in the hospital. Patient had a wound at the nasal area which initially small and increased in width. It had hemorrhagic crusts with unclear boundaries and multiple erosions. CT-scan result showed maxillary sinusitis sinistra. The patient was diagnosed with Mucormycosis from tissue histopathological examination.
Discussion: Mucormycosis is an angioinvasive infection caused by fungi of the order Mucorales. The most common cause of Mucormycosis is Rhizopus. Mucorales is ubiquitous in nature and can cause invasive disease in immunocompromised patients, diabetes mellitus is one of the prime risk factors. Histopathological examination of the tissue is essential to determine the tissue reaction and the causative fungal pathogen. H&E, PAS, and GMS staining use for histopathological examinations specifically for fungal infection.
Conclusion: Mucormycosis has high morbidity and mortality among patients. Histopathological examination is the gold standard for diagnosis. Empiric antifungal therapy needs to be given. Early therapy and rapid diagnosis can reduce mortality.

Keyword: Mucormycosis, diabetic ketoacidosis, histopathology examination

P-018

Methicillin resistant-*Staphylococcus haemolyticus* in fournier's gangrene: A case report of a rapid detection of pathogen using matrix-assisted laser desorption/ionization (MALDI) in an emergency case

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Background: Fournier's gangrene is a life-threatening genital tissue infection which can be caused by a mixed of aerobic and anaerobic microbes. *Staphylococcus haemolyticus* is rare but one of the causes of multi-drug resistant in Fournier's Gangrene cases. These cases are mainly related to people with diabetic history or other immunocompromised conditions.
Case presentation: A forty-two-year-old male was admitted to hospital with pain and swollen in scrotal area. Patient has no diabetic history. His leucocytes were increased along with his blood neutrophil-lymphocyte ratio (11.98%). Direct gram evaluation from his genital ulcer taken during emergency debridement, showed gram-positive cocci which subsequently identified as *Staphylococcus haemolyticus* by MALDI. Partial sequencing of isolates 16S rRNA confirmed this finding. Antimicrobial susceptibility assay with VITEK2® confirms its resistance to methicillin. Based on early results, patients was given vancomycin and his symptoms subsided following the treatment.
Discussion: *Staphylococcus haemolyticus* normally colonizes perineal skin but it is uncommon causes of Fournier's gangrene, which is typically a polymicrobial infection including enteric anaerobes. It is resistant to most beta-lactam antibiotics, equal to others coagulase-negative staphylococci. Rapid microbial identification are needed to confirm the species so vancomycin can be given immediately. Here, we showed the importance of rapid identification assay such as MALDI and other molecular assays in an emergency case of infections.
Conclusions: Methicillin Resistant-*Staphylococcus haemolyticus* is rarely associated with Fournier's Gangrene, early diagnosis using molecular detection assays can speed-up pathogen identification process and the start of the treatment.

Keywords: *staphylococcus haemolyticus*, methicillin resistant, fournier's gangrene, MALDI

P-022

A case report of double lumen catheter infection by methicillin-sensitive *Staphylococcus aureus*: True pathogen or colonisation?

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Background: Skin flora and environment bacterial infection are common complications related to haemodialysis-central venous catheter use. But the extend of efforts in deciding whether they are the true pathogen or just a contaminant still overlooked.
Case Presentation: A 43-year-old female was admitted with fever and right leg discomfort for a week prior to hospitalization. The patient has regular dialysis via a double lumen catheter (DLC) on her right tight. Laboratory testing revealed rise in neutrophil-leucocytes ratio. Intravenous ceftriaxone was used as empiric therapy. DLC tip and blood cultures were performed. Methicillin-sensitive *Staphylococcus aureus* (MSSA) and *Pseudomonas aeruginosa* were isolated on the DLC tips. While blood cultures from two cites, both positive for MSSA only. These results were confirmed also by Matrix-assisted laser desorption/ionization (MALDI) and nucleic acid amplification test (NAAT). Patient then given vancomycin and her condition soon improved.
Discussion: Higher infection rates are often observed with double lumen catheters where the chance of bacterial colonisation is increased by frequent use of the catheter. Femoral vein cannulation is associated with a higher chance for infection. Skin flora and environment bacteria are some of the frequent contaminants, therefore these pathogens have to be isolated in blood before pint-pointing them as the causal pathogen. Here we demonstrated the *P. aeruginosa* only as contaminant due to the absence of this bacteria in patient's circulation.
Conclusions: In cases of catheters-associated infection, evaluation of multiples blood specimens is needed to rule out any pathogen colonization.

Keyword: infected-double lumen catheter, colonisation, true pathogen

P-026

Analysis of qualitative antibiotic use in confirmed-case COVID-19 inpatients at Dr. Zainoel Abidin General Hospital during the early days of pandemic

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Background: Antibiotic use is not recommended as COVID-19 first line treatment. The impact of antibiotic misuse may lead to antibiotic resistance and more complicated disease.
Objectives: The study aims to evaluate the use of antibiotics in quality and its utilization with confirmed-case COVID-19 inpatient's clinical outcome at Dr. Zainoel Abidin General Hospital.
Methods: This observational analytic study was conducted by obtaining data from medical record retrospectively of confirmed-case COVID-19 inpatients during March 2020-December 2021. The samples were taken using accidental random sampling. There are 100 samples collected and assessed for appropriate use of antibiotics using Gyssens algorithm.
Results: Among 100 patients, this study found 32% had severe COVID-19, and 7% were dead. In terms of quality, this study rational antibiotic use was 34.1%, while the other was 65.9% considered irrational antibiotic use. Azithromycin held the highest percentage (59%) in Gyssens 0 category of its own, followed by Levofloxacin (44%). The most irrational use of all antibiotic prescriptions was Ceftriaxone (19%). However, rational usage of antibiotic does not have significant association with COVID-19 patients' mortality (p=0.820; OR 1.19, 95% CI: 0.25-5.65).
Conclusions: Based on the results above, it was not proven that the rational use of antibiotics could improve clinical outcome of COVID-19 case.

Keywords: Antibiotic, rational use, gyssens, outcome, COVID-19

P-027

Case report: Spontaneous bacterial empyema due to an extended spectrum beta lactamase producing *Escherichia coli* in diabetic patient.

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Background: Spontaneous bacterial empyema (SBEM) is infection of the pleural cavity in the absence of pneumonia and usually is related to liver cirrhosis or hepatic hydrothorax. Here we present a SBEM case not related to liver diseases but with other underlying diseases.
Case Presentation: A 54-years old female presented with chief complaints of shortness of breath for 1 week before admission which was not affected by activity nor weather. She also had generalized weakness and coughing but no fever. History of contact with tuberculosis patient and sputum with traces of blood were denied. The patient has been diagnosed with chronic kidney disease for 6 years, and with hypertension and diabetes mellitus for 10 years. She underwent breast tumor surgery 3 months ago.
Discussion: Chest X-ray revealed bilateral pleural effusion. Pleural tap was performed, and purulent fluid sample was sent for microbiological examination. The Gram-negative bacilli that grew on MacConkey agar was identified as extended spectrum beta lactamase producing *Escherichia coli* and was confirmed by MALDI-TOF MS and PCR sequencing. The bacterial agent was susceptible to meropenem, and the patient was discharged home.
Conclusions: SBEM may occur without liver diseases or hydrothorax. Prompt bacterial culture and appropriate antibiotic treatment effectively cured SBEM.

Keywords: Empyema, *Eschericia coli*, diabetic

P-028

Staphylococcus warnerii: Commensal bacteria cause endophthalmitis

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Background: Endophthalmitis is an inflammation of the inside of the eyeball, generally occurring due to infection. Endophthalmitis infection can be caused by bacteria, viruses, fungi or parasites. Most cases of endophthalmitis occur due to bacterial infections that enter the eye through the wound.
Case presentation: A 58-year-old woman with complaints of a right eye unable to see experienced since 5 days ago after cataract surgery, a history of exposure to water, dust and smoke after cataract surgery was denied. History of pterygium surgery on the right eye about 5 months ago, History of hypertension and diabetes denied. Specimens in the form of vitreous fluid from the right eye, culture was carried out on blood media so that, after incubation for 1x24 hours aerobic culture there was a growth of white beta hemolysis colonies, microscopically morphological microorganisms in the form of gram-positive clustered coccus with positive catalase tests, negative coagulase, identification using Vitek2 bacteria identified 99% probability *Staphylococcus warnerii*, confirmation of examination by MALDI-TOF mass spectrometry test method identified *Staphylococcus warnerii* bacteria, with sequence test *Staphylococcus warnerii* strain S-66 16S ribosomal RNA gene.
Discussion: Organisms identified as *Staphylococcus warnerii* using Vitek2 are known to be sensitive to Amoxicillin, Cefotaxime, Gentamycin, Ciprofloxacin, Levofloxacin and Sulfamethoxazole. Other studies say that post-traumatic eye *Staphylococcus warnerii* has a poor prognosis.
Conclusion: *Staphylococcus warnerii* is a commensal bacterium and can be pathogenic in cases of endophthalmitis which is the dominant species of coagulase negative staphylococcus.

Keywords: *Staphylococcus warnerii*, endophthalmitis

P-029

Neck abscess due to *Salmonella enterica* infection in diabetes mellitus patient

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Background: *Salmonella enterica* is a species of gram-negative bacteria that very rarely cause infection outside the digestive tract. This case describes a patient with neck abscess due to *Salmonella* in a diabetic patient.
Case Presentation: A 63-year-old man presented with complaints of pain and jaw swelling which had persisted for the past 3 weeks. Initially 1x1 cm tender lump was palpable beneath the right jaw which eventually enlarged to 3x2 cm lump. There was no history of fever, cough, night sweats, nor weight loss but there was a large cavity in the lower left molar-2. The patient has been diagnosed with Diabetes Mellitus for 9 years but not regularly taking glibenclamide. After 3 days administration of insulin, abscess debridement was performed and pus swab was sent for microbiological examination. The culture yielded *Salmonella enterica subspecies enterica.* Polymerase Chain Reaction based on 16s ribosomal RNA gene and sequencing results showed *Salmonella enterica serotype strain Enteritidis*_s85_04530. MALDITOF-MS method confirmed 99.9 % *Salmonella entica ssp enterica.* Levofloxacin was administered and the patient was discharged home after 5 days.
Discussion: *Salmonella spp*. transmitted by the oral route causes enteric fever, systemic infection and enteritis. Very rarely it causes focal neck or lung abscess, and bone infections which was preceded by bacterial entry and replication in the tissue that worsened due to immunocompromised status, such as diabetes mellitus, connective tissue disorders, or use of immunosuppressive agents for many different diseases.
Conclusions: *Salmonella enterica* is a potential cause of abscess in immunocompromised condition.

Keyword: *Salmonella enterica,* Neck abscess, Diabetes mellitus

P-030

Prevalence and antimicrobial susceptibility patterns of ESBL-producing *Klebsiella pneumoniae*: A five-year retrospective cross-sectional study

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Background: *Enterobacteriaceae,* which are resistant to carbapenem and produce Extended-spectrum β-lactamase (ESBL), has become a priority pathogen by the WHO. ESBL is frequently found in *Klebsiella pneumoniae*. The first case of ESBL-producing *Klebsiella pneumoniae* was reported in 1983, and currently, its cases continue to increase and become a serious threat to patient management.
Objectives: This study was conducted to add to the data on the prevalence of ESBL-producing *Klebsiella pneumoniae* in Indonesia.
Methods: This research is a retrospective descriptive study with a cross-sectional approach to examine the prevalence and antimicrobial susceptibility patterns of *Klebsiella pneumoniae* by utilizing secondary data taken from the WHONET 2022 software. The samples studied consisted of routine diagnostic results sent to the Clinical Microbiology Laboratory Faculty of Medicine, Universitas Indonesia (LMK FKUI), Jakarta, from 2017 to 2021.
Results: We found that the prevalence of ESBL-producing *Klebsiella pneumoniae* was 24.5% of the total 531 isolates, with one isolate also resistant to meropenem. Based on the sample type, ESBL-producing *Klebsiella pneumoniae* was mainly found in urine samples, followed by sputum and tissue samples. ESBL-producing *Klebsiella pneumoniae* has been found in many countries, including Indonesia, and even isolates resistant to carbapenem have been identified, although their number is still small.
Conclusions: This condition remains a serious problem and a global challenge, requiring the control of antimicrobial use to prevent the spread of resistance.

Keywords: *Klebsiella pneumoniae*, Extended-spectrum β-lactamase, resistant, Indonesia, Jakarta

P-031

A case report: A switch from empiric to definitive therapy after identification and antibiotic susceptibility testing for Methicillin-sensitive *Staphylococcus aureus* isolate

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Background: Diabetic foot ulcer (DFU) is a chronic complication of diabetes that is estimated to affect around 26 million people annually, with a global prevalence of 6.3%. Diabetic foot ulcers are often complicated by bacterial infections such as *Staphylococcus aureus*.
Case Presentation: We report the case of a 50-year-old-male who was hospitalized with 5x7 cm abscess, on his left foot two weeks prior to admission. The patient has history of hypertension and diabetes mellitus with HBA1c 12.1%. Radiological examination showed soft tissue swelling of the left pedis region and the postero-anterior spur of the left calcaneus bone. The patient's leucocyte was 29.410 10^3/ul. The patient underwent an abscess drainage incision and debridement. Metronidazole and ceftriaxone were administered as the initial broad-spectrum therapy. Methicillin-susceptible *Staphylococcus aureus* (MSSA) was identified and the patient's condition was improved with cefixime administration.
Discussion: Culture and antibiotic susceptibility testing is important, in cases where empiric therapy is not appropriate for *Staphylococcus aureus*. In this case it should be considered that *Staphylococcus aureus* is the most common cause of skin infection, so empiric therapy can be used early for treatment of *Staphylococcus aureus.*
Conclusions: This report highlight the importance of bacterial culture for determination of definitive antimicrobial therapy.

Keywords: *Staphylococcus aureus*, diabetic foot ulcers, definitive antibiotic.

P-034

Vaccination status of COVID-19 positive cases in Dr. Saiful Anwar General Hospital Malang, a one-year study

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Background: Since the pandemic's confirmation, SARS-CoV-2 has undergone mutations, which contributes to the increase of transmission and changes in clinical manifestations. This condition makes diagnosis and prevention more challenging. Indonesia has reached 86,87% of first-dose, with fair second and third doses coverage. However, the possibility of SARS-CoV-2 mutation may decrease vaccination effectiveness.
Objectives: We aimed to discover the possible relationship between the number of COVID-19 confirmed cases and their vaccination status.
Methods: This study is a descriptive retrospective study, collecting COVID-19 confirmed case data in the Clinical Microbiology Dept of Dr. Saiful Anwar General Hospital from September 2021 to August 2022. Vaccination status was collected using a laboratory requisition form filled out by the resident in charge. Confirmation of COVID-19 was performed using PCR Abbott M2000 and GenExpert Rapid Molecular Assay.
Result and Discussion: Within a year, 2503 samples were collected and 828 samples were confirmed as COVID-19 positive (33%). From these positive cases, 511 patients were unvaccinated (63%), 58 patients finished the first dose (7%), 233 patients finished the second dose (28%), 13 patients finished the third dose (2%), and 1 patient finished the fourth dose. More than half of the positive cases were unvaccinated. Positive cases in the first dose group are interestingly lower than in the second dose group. Positive cases in the third dose group are much lower than in other groups, supporting that a booster dose is necessary.
Conclusions: COVID-19 is preventable with vaccination itself cannot fully prevent the infection.

Keywords: covid-19 confirmed case, vaccination status

P-035

Mycobacterium tuberculosis positivity and rifampicin sensitivity of sputum examination using xpert MTB/RIF ultra

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Background: The TB incidence rate rose by 3.6% WHO TB Report 2020 to 2021, and jumped 61.98% in 2022 in Indonesia, reversing declines of about 2% per year for most of the previous 2 decades related to covid-19 in the pandemic period. Xpert MTB/RIF Ultra additionally includes the two MTB-specific insertion sequences (IS1081 and IS6110) and a larger DNA amplification reaction chamber aiming to improve diagnostic accuracy.
Objectives: To study the positivity detection of MTB and rifampicin sensitivity profile in sputum examination using Xpert MTB/RIF Ultra of suspected pulmonary TB patients in Dr. Soetomo Referral Hospital.
Methods: This study was conducted in a referral hospital Dr. Soetomo, Surabaya Indonesia, from January 2023 to April 2023. Medical record data of suspected PTB adult patients on the sputum examination result of Xpert Ultra, presented MTB positivity detection-rifampicin sensitivity.
Results: A total of 458 samples, 146 (31,8%) were detected with positive MTB. The PTB patient's characteristics were 70% male, 28% female. The most age is 14-20 years (18) followed 51-55 years (17), and the majority were still sensitive to rifampicin 85.6% and 5.4% were resistant. Out of all MTB positive detected were 19.1% diabetes mellitus and 15,7% HIV positive which of 34,7% were resistant to rifampicin.
Conclusions: In this study, MTB was most detected in men, and the majority were still sensitive to rifampicin. Gene Xpert MTB/RIF Ultra can effectively be used as an initial screening for rifampicin sensitivity in TB patients and considered in TB-HIV.

Keyword: expert mtb/rif ultra, rifampicin sensitivity

P-036

Appendicitis with double infection of acid fast-bacilli and extended-spectrum beta-lactamase producing *Eschericia coli*

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Background: Appendicitis is an infection of the vermiform appendix that causes extensive or periumbilical abdominal pain. Tuberculous appendicitis is a disease that mostly affects children, but some situations, such as a weakened immune system, can cause gut bacteria such as *E. coli* and mycobacteria to cause inflammation and infection.
Case presentation: A 12-year-old boy with chief complaints of pain in the right abdomen in the last week before being admitted to the emergency room, which worsened in the last 3 days. Upon admission, the patient described symptoms including fever, vomiting, diarrhoea, and occasional coughing. He had a history of testicular tumours and underwent surgery in 2012. Complete chemotherapy was done in 2013. A laboratory examination showed leucocytosis, and an ultrasound examination found acute appendicitis suspected of perforation. The patient underwent a cito laparotomy. During the surgical procedure, pus was evacuated from the peritoneal cavity and sent to the microbiology laboratory for examination. On acid-fast staining, acid-fast bacilli were found to be positive, and aerobic culture results identified extended-spectrum beta-lactamase-producing *Escherichia coli*. Similar results were also shown in the MALDI-TOF test with 99.9% *E. coli*.
Discussion: The appendix contains aerobic and anaerobic bacteria, including *E. coli*; it is caused by obstruction of the appendiceal lumen. Co-infection with mycobacteria is rare but possible in patients with immunocompromised conditions.
Conclusions: In individuals with a history of chemotherapy, AFB staining in cases of perforated appendicitis can be considered to ascertain the etiologic of mycobacterium infection.

Keywords: *Escherichia coli*, Mycobacteria, Immunocompromised, Chemotherapy

P-037

Identification of *Mycobacterium tuberculosis* complex isolated from sputum of pulmonary TB patients

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Background: As cases of tuberculosis increase in the world, the need for simple, fast and cost-effective diagnostic techniques is urgently needed, especially in resource-poor countries. Some *Mycobacterium tuberculosis* complex (MTBC) cases with smear positive will continue to be misclassified as *Mycobacterium tuberculosis* (MTB) and receive chemotherapy commonly used for tuberculosis.
Objectives: In this study we have standardized and validated the use of multiplex PCR targeting the IS6110, MTP40 gene fragment to differentiate MTBC and MTB.
Methods: The single Multiplex PCR assay was evaluated to test its utility in 137 sputum specimens from TB patients. All specimens were processed from GeneXpert to confirmed TB positive and smear AFB (Acid Fast Bacilli), DNA extraction and single multipleks PCR testing targeting MTP40 primer and IS6110.
Results: Out from 137 samples of TB patients, 78 (56.9%) were male and 59 (43.1%) were female. Based on smear result, only 71 (51.8%) were confirmed positive and 66 (48.2%) were negative. From 71 samples smear positive, 46 (64.8%) was PCR positive with MTP40 primer and only 35 (49.3%) were positive by IS6110 primer which show that 11 samples that were not amplified the IS6110 target were not MTB.
Conclusions: Our study shows that multiplex PCR can be used to detect and differentiate between MTB and MTBC more rapidly and accurately. The detection of MTBC can prevent errors in diagnosis and treating OAT because some strains of MTBC may be resistant. In addition, with this method cases of mixed infections can also be reported.

Keywords: Acid fast bacilli, polymerase chain reaction, tuberculosis, IS6110 and MTP40.

P-038

A case report: Methicillin resistant *Staphylococcus aureus* in patients with cellulitis

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Background: Cellulitis is a bacterial infection of the skin and underlying tissues and more at risk if experienced by someone who has an incision or surgical wound. A risk factors such as a previous history of people with diabetes mellitus, having a immunocompromised disorder and suffering from other skin. The most common bacteria that can cause cellulitis include *Streptococcus hemolytic*, *Streptococcus pneumonia* and *Staphylococcus aureus*.
Case Presentation: A-54-years old woman was admitted to the hospital with a nodule filled with pus on the right side of her face. It was accompanied by redness and swelling of the surrounding skin for 5 days. History of the same condition a year ago and was treated with surgery. History of diabetes mellitus in the past 2 years. Laboratory examination found an increase in white blood cells and neutrophils. The patient was diagnosed with cellulitis and undergo nodule incision. The specimen was sent to microbiology laboratory and microscopic gram staining showed gram positive cocci bacteria. Aerobic culture of the specimen identified as *Methicillin-resistant Staphylococcus aureus* (MRSA). The patient showed an improvement after treatment with Vancomycin.
Discussion: Cellulitis caused by MRSA is a serious complication. In this case, patients should receive antibiotics that cover against MRSA. Glycopeptide have been typically considered a first line antibiotic for MRSA.
Conclusions: MRSA can be marked by the appearance of lumps on the skin that resemble pimples and feel painful. Proper administration of antibiotics is very important in dealing with cases like this.

Keywords: Cellulitis, *Methicillin-resistant Staphylococcus aureus* (MRSA).

P-039

A case report: Submandibular abscess due to *Streptococcus anginosus* infection

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Background: *Streptococcus anginosus* was known as a human flora which can cause a serious pyogenic oral infection. This case demonstrated that *Streptococcus anginosus* as a potential cause of submandibular infection.
Case Presentation: A 31-year-old male presented swollen at the left cheek extended to neck area. Trismus 5 days. Intermittent pain at lower left tooth and worsened 2 weeks before hospitalization. Patients has fever and leukocytosis. Patient underwent abscess drainage. Results of gram stain showed gram-positive cocci. Automated identification revealed *Streptococcus anginosus*. Levofloxacin was administered for five days and patient's condition was improved.
Discussion: *Streptococcus anginosus* is commonly found in the upper respiratory and digestive tracts, including in severe submandibular infections. Early detection followed by aggressive management with antibiotics and surgical drainage is necessary.
Conclusions: Extensive surgical debridement and anti-infection treatment are associated with preferable outcome for submandibular infection.

Keywords: *Streptococcus anginosus*, Absces submandibular, Surgical drainage

P-040

Pseudomonas stutzeri an a post cataract extraction-associated acute endophtalmitis: A case report of surgical site infection

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Background: *Pseudomonas stutzeri* is a rod shaped gram-negative bacterium found in soil and water. It is omnipresent in hospital environment and is also an opportunistic human pathogen. Previously, wound and post-operative infections caused by *P. stutzeri* has been described, which mostly involving inadequate peri-operatic management of the patients.
Case Presentasion: A 60-year-old male, admitted to hospital with loss of vision, and can only see light. The patient had history of one-day care cataract surgery in the left eye 7 days prior to the current hospital admission. The loss of vision begun 5 days after the surgery. Patient has normal white blood cell count with a slightly increased neutrophils and lymphocytes ratio (NLR). Microbial evaluation of specimen taken during a pars plana vitrectomy found *Pseudomonas stutzeri*. This result was confirmed by matrix-assisted laser desorption/ionization (MALDI) and nucleic acid amplification tests (NAAT). Patient then given topical levocin every hour along with oral ciprofloxacin.
Discussion: *P. stutzeri* has described acute endophthalmitis in patients undergoing cataract extraction with intraocular lenses. Since this bacterium are abundant in environment, precaution in patient preparation and instrument management before and during surgery are crucial to avoid this bacteria contamination. In addition, post-surgery instruction to patient is one of the components which are needed to be emphasized instead of relying on prophylaxis antibiotic only.
Conclusions: Though rare, *P. stutzeri* should be considered in the list of microorganisms responsible for post cataract extraction-associated surgical site infection.

Keywords: *Pseudomonas stutzeri,* acute endophtalmitis, cataract extraction, surgical site infection

P-042

Sea urchins as a source of the active substance linalool, a drug candidate for alzheimer's disease

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Background: Alzheimer's disease is a chronic progressive neurodegenerative disease with pathology in the form of neurotoxic Aβ fibril deposition, hyperphosphorylation of tau, formation of neurofibrillary tangles, and degeneration of the neuron population in brain tissue.
Objectives: This series of pathological processes has clinical implications in the form of a progressive decline in cognitive function, especially in the memory domain in its patients.
Methods: The currently available pharmacological treatments for Alzheimer's dementia, although they have adequate clinical evidence and are widely used in various countries, are still not completely satisfactory due to the fact that there are still reports of drug side effects that are quite common.
Results: Sea urchins are one of the marine biota that are known to contain various bioactive compounds that have therapeutic effects for Alzheimer's disease. One of the bioactive compounds contained in sea urchins that has the potential to be developed as a drug for Alzheimer's disease is linalool. These compounds have anti-inflammatory, antioxidant, and neurotropic properties, properties needed to slow the progression of Alzheimer's disease.
Conclusions: Several potential therapeutic targets of the bioactive compound linalool contained in sea urchin that can be identified include inhibition of A-beta fibril deposition, decreased activity of GSK-3b, inhibition of NF-kB activation, and competitive antagonist for the neurotransmitter glutamate in binding to NMDA receptors.

Keywords: Sea urchins, bioactive compounds, linalool, Alzheimer’s disease, neurodegeneration

P-043

Consumption of marine fish and the clinical course of Alzheimer's dementia

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Background: Alzheimer's disease (AD), the most prevalent form of dementia, has emerged as a significant worldwide health concern. Marine fish is rich in omega-3 PUFA which is known to have many health benefits, especially on cognitive function.
Objectives: This review examines the molecular neuroprotective mechanism of omega-3 PUFA and genetic variables that might inhibit the neuroprotective effect of omega-3 PUFA.
Methods: Peer-reviewed articles were searched using the search terms "Marine Fish", "PUFA", "Omega 3", "Alzheimer's Dementia", "cognitive function", "neurodegenerative", "Amyloid ", and "genetic" on PubMed, Scopus, and Google Scholar.
Results: Omega-3 LCPUFA inhibits excessive inflammatory processes by increasing phagocytosis of Aβ by microglia, resulting in a decrease in inflammatory markers, and decreasing NF-κB activity, resulting in a decrease in a number of proinflammatory cytokines. Omega-3 LCPUFA reduced Aβ deposition by increasing LRP-1 expression, glymphatic system activity, and the activity of Aβ-degrading enzymes. APOE4 allele (APOE4) is the primary genetic risk factor for late-onset AD. The APOE4 allele has lower antioxidant activity than other alleles.
Conclusions: Omega-3 LC PUFA increases antioxidant activity and decreases inflammation and oxidative stress, particularly in the brain. In addition, PUFA enhanced Aβ clearance and lowered the formation of Aβ and NTF. Nevertheless, the neuroprotective benefits of ω-3 LC PUFA were diminished in APOE4 carriers**.**

Keywords: omega-3 PUFA, neuroprotective, dementia, Alzheimer's disease, genetic.

P-044

Portrait of qualitative and quantitative use of antibiotics in Sanjiwani General Hospital, Gianyar, Bali, 2022

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Background: The quality and quantity of antibiotic use in hospitals is an indicator of the Antimicrobial Resistance Control Program. Rational use of antibiotics and the use of antibiotics according to the criteria of Access, Watch, Reserve are targets to be achieved in the management of infectious cases in reducing morbidity, mortality and the incidence of infections by multiresistant bacteria.
Objectives: This study aims to provide an overview of the quality and quantity of antibiotic use in the Sanjiwani Regional General Hospital.
Methods: This research is a cross-sectional quantitative descriptive study conducted at the Sanjiwani Regional General Hospital in 2022. Random sampling was carried out on the samples that were used as research subjects and Gyssen analysis was carried out and Daily Define Dosage assessment per 100 patient days.
Results: Gyssen's analysis of 313 use of antibiotics, 79.60% (249) were empirical therapy and 20.45% (64) were prophylactic therapy. Of the entire sample, 72.02% (225) used antibiotics rationally (category 0), 13.69% (43) category 4, respectively 6.00% (19) category 2.3 and 2.98% (9)) no indication (category 5). Rational use of antibiotics (category 0) for therapy therapy and strengthening prophylaxis respectively 75.90% (189) and 64.52% (42). The use of empirical antibiotics in cases of children and internal medicine was mostly rational (86.84% (37) and 86.05% (33)) and the rational use of prophylactic antibiotics in cases of obstetric ginecology and non obstetric ginecology was 100% (30) and 31.25% (10) respectively. The 3rd generation cephalosporin antibiotics (ceftriaxone and cefotaxim), fluoroquinolones (levofloxacin) and metronidazole are the three most common types of antibiotics that are generally spread in the Sanjiwani Regional General Hospital. The most widely used backup antibiotic is the antibiotic meropenem.
Conclusions: In general, the quality of antibiotic use at Sanjiwani Hospital is quite good, but still needs to be improved through approaches and outreach to all hospital staff, especially to medical staff groups so as to reduce the use of 3rd generation cephalosporin antibiotics both as empiric and prophylactic.

Keywords: Gyssen analysis, daily define dose, quality and quantity of antibiotics, types of antibiotics, antimicrobial resistance

P-045

Bacterial patterns and antibiotic susceptibility in neonatal sepsis at Dr. Soetomo Hospital

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Background: Neonatal sepsis defines a systemic disease of bacterial, viral, or fungal origin, accompanied by hemodynamic alterations and clinical findings, causing severe morbidity and mortality. Neonatal sepsis refers to infection of the bloodstream in newborns less than 28 days of age.
Objectives: The aim of this study is to determine bacterial patterns, antibiotic resistency, and antibiotic susceptibility in neonatal sepsis.
Methods: This retrospective study was conducted on neonates admitted to Dr. Soetomo hospital, from January 2023 to March 2023. The research subjects were all neonates with neonatorum sepsis accompanied by positive blood culture. Exclusion criteria were incomplete medical record data.
Results: There were 22 neonates diagnosed with neonatal sepsis with positive blood cultures. The most commonly isolated bacteria were *Staphylococcus haemolyticus* (17.39%) and *Klebsiella pneumoniae* (17.39%). *Staphylococcus haemolyticus* were resistant to the antibiotics ampicillin and gentamicin, but remained susceptible to vancomycin. Meanwhile, *Klebsiella pneumoniae* is resistant to ampicillin, gentamicin, and extended-spectrum cephalosporins, but remains susceptible to the antibiotics amikacin and carbapenems.
Conclusions: The most common causes of neonatal sepsis are *Staphylococcus haemolyticus* and *Klebsiella pneumoniae*. And both bacteria are resistant to the antibiotics ampicillin and gentamicin.

Keywords: neonatal sepsis, blood cultures, antibiotics.

P-046

Diphtheria in a 37-year-old man

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Background: Corynebacterium diphtheriae is a bacterium that causes diphtheria, which attacks the upper respiratory tract and causes symptoms such as fever, sore throat, and difficulty breathing Diagnosis and treatment should be focused on preventing further complications. Laboratory tests are used to confirm the diagnosis and the right type of treatment.
Case Presentation: A 27-year-old man complained of three days of sore throat with a lump in the throat, pain when swallowing, fever, and shortness of breath. After a day of hospitalization in Kudus Hospital, the patient's complaints began to decrease. However, for more precise identification and access to treatment, the patient was referred to RSDK. Laboratory examination results on Albert staining showed metachromatic granules at both ends of the bacteria and phoenix identification showed Corynebacterium diphtheriae. This indicates that the patient has a bacterial infection that causes inflammation of the tissues in the throat (tonsillitis), which is caused by the bacterium Corynebacterium diphtheriae.
Discussion: This case describes a 27-year-old man with suspected peritonsillitis and acute exacerbation of chronic tonsillitis. Laboratory tests showed that the patient was infected with Corynebacterium diphtheriae. The patient should be treated with antibiotics, and after recovery should be vaccinated against diphtheria to prevent re-infection. It is important to carry out strict surveillance and prevention.
Conclusion: Based on the symptoms and examination results in the above case, Suspected peritonsillitis causing acute exacerbation of chronic tonsillitis. Patient tested positive for Corynebacterium diphtheriae, the main cause of diphtheria.

Keywords: Corynebacterium diphtheriae, infection, RSDK, peritonsillitis,

P-047

Detection of *Chlamydia trachomatis, Mycoplasma pneumonia, Legionella pneumophila and Ureaplasma urealyticum* using polymerase chain reaction (PCR) of neonatal sepsis patients in RSUP Dr. Wahidin Sudirohusodo Hospital Makassar

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Objectives: This study aimed to detect *Chlamydia trachomatis, Mycoplasma pneumonia, Legionella pneumophila* and *Ureaplasma urealyticum* by Polymerase Chain Reaction (PCR) and the description of patient with neonatal sepsis treated in RSUP Dr. Wahidin Sudirohusodo Hospital Makassar.
Methods: This study was a descriptive observational study in neonates with suspected sepsis. Neonates with suspected sepsis will have 0.5-1 cc of blood taken and then examined to detect *Chlamydia trachomatis, Mycoplasma pneumonia, Legionella pneumophila and Ureaplasma urealyticum* using PCR.
Results: From 55 patient's blood, *Chlamydia trachomatis* was identified in 25 blood (45.45%) and none of the blood identified *Mycoplasma pneumonia, Legionella pneumophila and Ureaplasma urealyticum.* There were significant differences in infection marker of procalcitonin and the risk factors of the patient's mother in the form of a history of urinary tract infection/vaginal discharge during pregnancy in patients with neonatal sepsis causa *Chlamydia trachomatis* and non *Chlamydia trachomatis* and there were no significant differences in clinical features; infection markers of WBC, CRP, IT ratio and platelets; the risk factors for premature rupture of the membrane and infection during pregnancy; and the outcome of patients with neonatal sepsis causa *Chlamydia trachomatis* and non *Chlamydia trachomatis.*
Conclusions: PCR is a promising modality to detect atypical bacteria from blood of neonatal sepsis that difficult to identified by conventional technique. This is very useful for providing rapid and appropriate therapy to neonatal sepsis patients.

Keywords: neonatal sepsis, *Chlamydia trachomatis*, PCR

P-048

The antimicrobial activity of bacteriocin producing *Lactobacillus* sp from growol isolate

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Background: Growol is a traditional food made from fermented cassava. Several Lactobacillus bacteria are involved in the manufacture of Growol. Lactic acid bacteria isolated from traditional foods produce bacteriocins, which have potential as antibacterial agents. Many pathogenic bacteria in the digestive tract are still sensitive to bacteriocins produced by lactic acid bacteria.
Objectives: The purpose of this study was to examine the bacteriocin activity produced by Lactobacillus growol isolates against *Staphylococcus aureus, Escherichia coli, Salmonella typhi*, and Candida.
Methods: Lactic acid bacteria were isolated from growol using de Man, Rogosa, and Sharpe (MRS) agar media and identified by gram staining tests, catalase tests, and gas production tests from glucose. Test the antimicrobial activity of bacteriocins produced by lactic acid growol isolates against test bacteria using the Kirby-Bauer method.
Results: The results indicate that the lactic acid bacteria isolated from Growol are Lactobacillus. The bacteriocin produced by Lactobacillus isolate growol inhibits S. aureus, *E. coli, Salmonella typhi*, and Candida with a diameter of sensitivity inhibition as follows: 8.1 mm, 10.2 mm, 10.4 mm, and 0. This study proves that the bacteriocin produced by Lactobacillus growol isolate is able to inhibit *Staphylococcus aureus, Escherichia coli,* and *Salmonella typhi*.
Conclusions: However, bacteriocin is not effective against the Candida fungus. It is necessary to carry out further research on the active compounds making up the bacteriocins produced by Lactobacillus growol isolates.

Keywords: Growol, bacteriocin, inhibition, fungus, Lactobacillus

P-050

Association between white blood cells count and CRP in COVID-19 patients at Adjidarmo Hospital, Lebak Regency

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Background: The presence of elevated inflammatory markers in COVID-19 is linked to severe illness.
Objectives: The aim of this study is to ascertain the relationship between white blood cell count and CRP levels in the COVID-19 patients.
Methods: A quantitative study using a cross-sectional design was conducted on COVID-19 in patients documented at Adjidarmo Hospital, Lebak Regency, from 2020 to 2021. The Yamane formula was used to compute the sample size, and 94 patients confirmed positive for COVID-19 were chosen using the purposive sampling technique. The data was analyzed using univariate and bivariate methods. The Spearman correlation test was applied in statistical testing.
Results: The majority of COVID-19 patients were aged 36-55 years (45%), male sex (56%) and non-health worker occupation (68%). The mean between WBC was 9645.11 + 3625.22 and CRP was 29.73 + 47.32. Analysis between the number of between WBC and CRP obtained P value = 0.000, r = 395. The COVID-19 virus that enters the respiratory tract via the ACE2 receptor will attack target cells and cause increased levels of interleukin (IL)-6 and CRP which codes for leukocyte proliferation. The current meta-analysis also suggested the association between WBC and poor outcomes. Our findings revealed a propensity resembling SARS.
Conclusions: There is a positive association between WBC and CRP. An increase in WBC is followed by an increase in CRP in COVID-19 due to inflammation.

Keywords: COVID-19, CRP, white blood cell

P-051

Enterobacter cloacae isolated from postsurgical endophthalmitis

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Background: Multiple studies have established risk factors for poor outcomes of post cataract endophthalmitis, including early onset, poor initial visual acuity, and etiologies other than *Coagulase-negative Staphylococcus* like bacteria that cause nosocomial infection for example *Enterobacter cloacae*.
Case Presentation: A 59-year old man with chief complaints of pain and blurring in the right eye, which has been experienced since 3 days ago after cataract surgery, accompanied by red and watery eyes. Decreased vision activity found after surgery and a history of diabetes mellitus and hypertension reported. Postoperative history of Eye Dextra the third days found there were hyperemic conjungtiva and minimal palpebral edema with secret of cilia, a cloudy cornea, hypopyon 2.5 mm (more than 1.3 mm) brown iris, the pupil is round, the Intra-Ocular-lens appears white behind the IOL which looks like turbidity. Increased number of White Blood Cell and Glucose level found in Laboratory Examination. The patient underwent surgery on the third-days, and the vitreous was taken for microbiological examination which *Enterobacter cloacae* was identified. Ceftriaxone and Levofloxacin where choosen for treatment and the condition has improved and can be discharged after 10-days treatment.
Conclusions: It is clear that early treatment in endophthalmitis is essential to achieve good outcomes. Our case implies that even with very virulent organisms such as *E. cloacae*, a good outcome can be achieved with effective, early treatment.

Keywords: cataract surgery, endophthalmitis, *Enterobacter cloacae*

P-060

Multidrug-resistant microorganisms carriage among COVID-19 patients at discharge screening in a tertiary care hospital in Indonesia (Interim report)

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Background: The impact of COVID-19 care on antimicrobial resistance (AMR) is a topic of debate. The risk of AMR infection may be high particularly among hospitalized COVID-19 patients. However, data on the emergence and acquisition of AMR among COVID-19 patients is scarce including in Indonesia.
Objectives: This study aimed to investigate the prevalence of multidrug-resistant microorganisms (MDROs) carriage among COVID-19 and non-COVID-19 patients at discharge in an Indonesian tertiary care hospital.
Methods: We consecutively screened COVID-19 and non-COVID-19 patients at discharge for MDROs carriage by culturing anterior nares and rectum swabs from March 2022 to April 2023. The MDROs including methicillin-resistant *Staphylococcus aureus* (MRSA), ESBL-producing Enterobacterales, Carbapenem-resistant Enterobacterales, and Carbapenem-resistant non-Enterobacterales were presumptively identified using CHROMagar medium.
Results: Over a one-year period, 189 discharged patients (94 COVID-19 and 95 non-COVID-19) were screened. 37.2% of COVID-19 and 33.7% of non-COVID-19 carried MRSA at discharge (p=0.610). The carriage rate of ESBL-producing Enterobacterales, Carbapenem-resistant Enterobacterales, and non-Enterobacterales was higher among COVID-19 than non-COVID-19 patients at discharge (35.1%/21.1%, p=0.032; 9.6%/0%, p=0.002; and 20.2%/4.2%, p=0.001; respectively).
Conclusions: COVID-19 care might be associated with the emergence and acquisition of MDROs in a tertiary care hospital in Indonesia. Further studies are needed to investigate the transmission of the MDROs both in COVID-19 and non-COVID-19 wards.

Keywords: COVID-19, Indonesia, multidrug-resistant organisms, carriage

P-061

Successful management of Hospital-Acquired Pneumonia through HAI bundle management in a 15-year-old female: A case report

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Background: Hospital Acquired Infections (HAIs) are a serious problem in hospitals, causing high mortality and morbidity rates. Hospital-Acquired Pneumonia (HAP) is one of the most common HAIs. Proper management of HAP through HAI bundle management in hospitals is crucial to minimize patient deaths and morbidity.
Case Presentation: A 15-year-old female was referred to RSUD Dr. Soetomo Surabaya after a traffic accident and suffered several serious injuries, including unstable pelvis, shock hemorragic, CF Ramus Pubis D/S, OF Olecranon S, Open Degloving + Skin loss Femur S, Ruptur Diaphragm S, and Susp. Ruptur Perineum. After undergoing surgery and intensive care in the hospital, the patient was found to have acquired HAP. The patient was given a combination of several antibiotics to target a broader spectrum of HAP-causing bacteria, including *Acinetobacter baumannii* and *Bacillus cereus*. Supportive therapy was administered, which included albumin administration and proper care of medical equipment to reduce the risk of infection. The patient successfully recovered after being treated for some time.
Discussion: The successful management of HAP in this case highlights the importance of proper HAI bundle management in hospitals. Effective HAI bundle management is crucial in preventing HAP and other infections, improving patient outcomes, and minimizing the risk of mortality and morbidity. This case report emphasizes the need to implement appropriate HAI bundle management in hospitals and promote awareness of its importance to healthcare professionals and the public.
Conclusions: Proper HAI bundle management is crucial in preventing HAP and improving patient outcomes in hospitals.

Keywords: Hospital Acquired Infections, Hospital-Acquired Pneumonia, HAI Bundle Management, Antibiotic Therapy, Supportive Therapy

P-062

Antimicrobial susceptibility profile of Carbapenem-resistant *Acinetobacter baumannii* (CRAB) from blood cultures in COVID-19 ICUs and non-COVID-19 ICUs at Dr. Saiful Anwar Hospital Malang, Indonesia from September 2020 to September 2022

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Background: Superinfections have become ever more problematic in intensive care units (ICUs) since the COVID-19 pandemic began, particularly those caused by Carbapenem-resistant *Acinetobacter baumannii* (CRAB) and causes elevation of mortality in BSI patients.
Objectives and Methods: This is a retrospective study analyzing the susceptibility rate of CRAB obtained from blood cultures since September 2020 to September 2022 based on the cumulation of antibiogram in Dr. Saiful Anwar Hospital, Malang, Indonesia. The bacterial identification and antibiotic susceptibility test were carried out by Vitek-2 system. The antibiotic susceptibility test was interpreted by Clinical and Laboratory Standard Institute (CLSI) 2021. The antibiotic susceptibility test results was analysed by WHO net 5.0. Data from pediatric patients and non-intensive care unit wards were exclude.
Results: This study examined 58 *Acinetobacter baumanii* isolates from COVID-19 ICUs and 35 isolates from non-COVID-19 ICUs between September 2020 and September 2022. CRAB has a high prevalence of at 100% from 2020 to 2021 and 45% from 2021 to 2022 in COVID-19 ICUs; 80% from 2020 to 2021 and 60% from 2021 to 2022 in non-COVID-19 ICUs. CRAB isolates were highly sensitive to trimethoprim-sulfamethoxazole (76%), amikasin (59%), and tigecycline (42%) in COVID-19 ICUs. Tigecycline (52%), amikasin (35%), and trimethoprim-sulfamethoxazole (26%) were effective against CRAB isolates in non-COVID-19 ICUs.
Conclusions: A multidisciplinary team's excellent performance and active surveillance culture would be necessary in order to identify and contain the CRAB epidemic in intensive care unit.

Keywords: Carbapenem-resistant *Acinetobacter baumannii*, bloodstream infection, healthcare associated infection

P-063

Antimicrobial effect of photodynamic therapy with methylene blue on clinical isolates *Acinetobacter baumannii* and *Pseudomonas aeruginosa*: In vitro

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Background: As microorganisms can rapidly develop resistance against the widespread use of various antimicrobial agents, this has become a global concern in the past several years, reaching crisis in many settings.
Objectives: We here investigated the effectiveness of antimicrobial photodynamic therapy (aPDT) mediated methylene blue for elimination of clinical isolates *Acinetobacter baumannii* and *Pseudomonas aeruginosa*.
Methods: The clinical isolates was subjected to PDT with Methylene blue (MB) and a light-emitting diode (LED) device that provides light at a single wavelength (660 nm). The bacteria was allowed to grow in a 24-well plate and was then exposed to MB at various concentrations, irradiated at a light energy of 1-80 J/cm^2. Bacterial viability was assessed at 30 min and 24 h after irradiation by determination of colony formation on agar plates.
Results: MB-PDT attenuated the viability of bacteria in a manner dependent on concentration and light energy. In the highest concentration of MB, 150 mg/L and light energy 80 J/cm^2, all clinical isolates leading to their lethal viable cell reduction.
Conclusions: This antibacterial system thus warrants further evaluation with regard to its potential effectiveness for the treatment of infectious disease.

Keywords: photodynamic therapy, methylene blue (MB), antimicrobials, gram-negative bacteria

P-064

The prevalence of multidrug resistant organisms among clinical isolates obtained from COVID-19 and regular patients in a tertiary hospital in Indonesia (Interim report)

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Objectives: To determine the prevalence of Multidrug-Resistant Organisms (MDROs) among clinical isolates obtained from COVID-19 and regular patients in a tertiary hospital in Malang, Indonesia. MDRO included Methicillin-Resistant *Staphylococcus aureus* (MRSA), Extended Spectrum Beta-Lactamase (ESBL)- producing -*Escherichia coli* and -*Klebsiella pneumoniae*, Carbapenem-Resistant (CR) *Klebsiella pneumoniae*, Carbapenem-Resistant *Pseudomonas aeruginosa* (CRPA), and Carbapenem-Resistant *Acinetobacter baumannii* (CRAB).
Methods: Clinical cultures of patients admitted to COVID-19 wards and regular wards in Dr. Saiful Anwar General Hospital, Malang, Indonesia, from March 2022 to April 2023 were included in this study. The MDROs isolates were identified phenotypically using the Vitek2® system.
Results: In total, 529 (18.9%) MDROs isolates were obtained from clinical cultures of 2798 patients enrolled in this study. Of this, 226/1299 (17.3%) and 303/1499 (20.2%) MDROs were collected from both COVID-19 wards and regular wards, respectively. 321/529 (77%) of patients were identified with single MDRO including MRSA (16/2798, 0.6%), ESBL-producing -*Escherichia coli* and -*Klebsiella pneumoniae* (180/2798, 6.4%), CR *Klebsiella pneumoniae* (11/2798, 0.4%), CRPA (10/2798, 0.4%), CRAB 104/2798 (3.7%). 96/529 (23%) patients were identified with multiple MDROs.
Conclusions: MDROs particularly ESBL-producing -*Escherichia coli* and -*Klebsiella pneumoniae* was the most frequently found in both COVID-19 and regular wards in Dr. Saiful Anwar General Hospital, Malang, Indonesia. Preventive measures should be implemented to prevent the transmission of MDROs.

Keywords: COVID-19, multidrug-resistant organisms, Indonesia

P-065

Intervening with healthcare workers knowledge on handling specimens of continuous ambulatory peritoneal dialysis fluid in Dr. Saiful Anwar Hospital, Malang, Indonesia

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Background: Data from Continuous Ambulatory Peritoneal Dialysis (CAPD) Unit of Dr. Saiful Anwar Hospital showed a culture-positive rate of 59%, which is below the International Peritoneal Dialysis (ISPD) 2022 guidelines benchmark of >85%. The collection, transport, and processing of specimens are keys to organism recovery and should be collected by trained healthcare workers. Hence, educational interventions should be conducted.
Objectives: This study aimed to evaluate the effect of educational intervention on knowledge of handling specimens of CAPD fluid among nurses in CAPD units.
Methods: An interventional study was performed from March to April 2023. We assessed knowledge perception of all nurses working at CAPD unit (n=8) using questionnaire consisted of 10 questions on the following topics: specimen preparation, collection, transport and storage. A correct answer was awarded 1 point, with a maximum score of 10 points for 10 correct answers and a score of zero for a wrong answer. Knowledge perception was analyzed using Wilcoxon tests.
Results: Overall, the knowledge score improved from 4.3 to 9.1 (p=0.011). No significant improvement in knowledge of routine assessment, etiology of false-negative results, general precaution, specimen collection, and BACTEC utilization. After intervention there is a significant improvement in knowledge of: aseptic procedure 0 to 6 (p=value 0.014); CAPD fluid volume 0 to 8 (p=0.005); specimen transport 0 to 8 (p=0.005); transport duration 4 to 8 (p=0.046); specimen storage 2 to 8 (p=0.014).
Conclusions: The educational programs improved knowledge among healthcare workers in CAPD unit. Re-educational programs are necessary to further improve knowledge in specimen preparation.

Keywords: CAPD, education, knowledge

P-077

An overview of *Candida spp* profile and antimicrobial susceptibility test profile of a Catheter-Associated Urinary Tract Infection (CAUTI) patient at the intensive care unit of Saiful Anwar Hospital in Malang, Indonesia

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Background: *Candida spp.* is one of the pathogens causing an increase in CAUTI cases associated with catheter use in the (Intensive Care Unit) ICU, with an incidence rate of 17.8%. This microorganism is considered the second major pathogen causing CAUTI cases in the ICU after *Escherichia coli*.
Objectives: This study aimed to discover the candida profile of catheterized patients obtained during this year from ICU patients at Dr. Saiful Anwar Malang General Hospital and their antimicrobial susceptibility patterns.
Methods: This study is a descriptive retrospective study using urine catheter specimens sent to the Microbiology Department of Dr. Saiful Anwar Hospital from January-December 2022. Fungi from culture were identified and susceptibility tests were performed using a VITEC 2 system standard and CLSI. The data is taken through WHONET software.
Results: The number of *Candida spp* isolated in this study was 41 from 283 positive samples isolated. Fungi that are isolated include *Candida albicans* 17 specimen (41.5%) and *Candida non albicans* 24 specimen (58.5%). *Candida albicans* are still sensitive to Fluconazole (100%), Voriconazole (100%) and Amphotericin B (100%). *Candida non albicans* are still sensitive to Fluconazole (87.5%), Voriconazole (100%) and Amphotericin B (100%).
Conclusions: *Candida non albicans* is the most common fungus isolated from specimens of CAUTI in January-December 2022 and the most sensitive antifungal for *Candida spp* are Voriconazole and Amphotericin B.

Keywords: *Candida spp*, CAUTI, Intensive Care Unit

P-080

Sensitivity and specificity of a COVID-19 screening tool using clinical symptoms parameters employed at Sultan Agung Islamic Teaching Hospital Semarang

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Background: The gold standard for diagnosing COVID-19 is established using RT-PCR. Before the RT-PCR results are out, practical and fast scoring system of the clinical symptoms is needed for patient management.
Objectives: This research was conducted to determine the accuracy of the tool used to screen suspected COVID-19 patients at the Sultan Agung Islamic Teaching Hospital in Semarang.
Methods: This diagnostic research used inclusion criteria which were patients with suspected COVID-19 who were hospitalized in March 2021-March 2022. The exclusion criteria were patients who had been confirmed positive or had incomplete medical record data. The screening tool uses a total score covering the patient's clinical symptoms, while the gold standard uses RT-PCR with the target of the SARS Cov-2 RdRp gene. The statistical test in this research used the ROC test.
Results: The results of the study of 60 suspected COVID-19 patients who were hospitalized, found that 23 (38.3%) out of 60 subjects were positive of COVID-19 while the rest (61.7%) were negative. The results of the analysis of the current COVID-19 screening tool at the Sultan Agung Islamic Hospital obtained a sensitivity of 91.3%, a specificity of 73%, and an AUC of 0.679. The positive score for COVID-19 using this tool is ≥ 3.75.
Conclusions: The conclusion is that the measured tool for screening COVID-19 can be used to screen COVID-19 patients with high sensitivity.

Keywords: COVID-19 Screening Tool, Sultan Agung Islamic Teaching Hospital Semarang

P-081

Performance evaluation of the proposed antigen detection rapid diagnostic tests for COVID-19

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Background: Beside the existing gold standard qRT-PCR, it needs to develop reliable ag-rapid diagnostic test (Ag-RDT) kits for COVID-19 which are particularly suited for point-of-care testing. WHO has already recommended the minimum performance requirements, compared to qRT-PCR in suspected cases of COVID-19.
Objectives: This research was conducted to analyze the performance of the three Ag-RDT kits proposed by some companies.
Methods: Each of the three Ag-RDT kits (A, B, C) were tested using 90 samples, consisting of samples with Ct ≤ 25 and Ct > 25 for SARS-CoV-2 genes, and negative samples.
Results: For samples with Ct >25, all kits could not detect SARS-CoV-2 ag but they showed 100% specificity. Meanwhile, for samples with Ct ≤ 25, kit C was the best (76.7% sensitivity and 100% specificity). The positive predictive value of the three kits was 100%, but their negative predictive value ranged 63%-84.8%. Kit C showed the best accuracy (89.9%). Any variation of target virus antigen, high homology with SARS-CoV-2, product design and quality of the kits, and other factors might contribute to the results.
Conclusions: The specificity of the three kits for all samples was high, however none met the minimum sensitivity requirement for samples with Ct ≤ 25. The validation tests are very necessary to be carried out by the authority in national healthcare to ensure their feasibility.

Keywords: rapid antigen detection test, SARS-CoV-2, COVID-19

P-082

Results of bacteria identification using MALDI TOF and Phoenix/Vitek

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Background: Bacterial identification can be carried out using the MALDI TOF technique, which is based on mass spectral fingerprints, or using the Phoenix or Vitek technique, which is based on biochemical examination. Several studies have been conducted to compare the two techniques to identify bacteria, but the results have varied.
Objectives: This study aims to compare the results of bacterial identification using MALDI TOF and Phoenix/Vitek.
Methods: This study used a cross-sectional approach; the sampling technique was consecutive. The sample used is bacterial isolates from patient specimens sent to the clinical microbiology laboratory at Dr. Kariadi Semarang during March and April 2023. The identification results of the two tools were compared using Cohen's Kappa coefficient test.
Results: The study showed 22 (4%) differences in the results of the identification of bacteria from a total of 536 samples. Of the 22 samples, MALDI TOF did not identify five samples, and 17 gave different results from the two tools. Statistical analysis found that there was an agreement relationship using both identification techniques with a substantial agreement (k value = 0.646), indicating that the two techniques can replace each other.
Conclusion: There is an agreement relationship between the two identification techniques with a substantial agreement, indicating that the two techniques can replace each other.

Keywords: identification of bacteria, MALDI TOF, Phoenix, Vitek

P-083

Case report: Antagonistic interactions between *Streptococcus agalactiae* and *Pseudomonas aeruginosa*

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Background: Polymicrobial infections can change the interaction of the organisms involved in the infection, causing changes in growth, and therefore can affect patient health and response to treatment.
Case Presentation: A 60-year-old woman, complaints that her middle finger on the right hand was blackened in last 3 days before hospitalized. The initial wound was ingrown nails with pus oozing from the middle finger, appeared 1 week ago. Patient also complained of coughing with phlegm that was difficult to expel, shortness of breath, pain, and had history of diabetes mellitus. The patient then diagnosed with cutaneous abscess+necrosis of manus dextra digiti III+DM type 2+CAP. Abscess culture sent on April 23, 2023 was *Streptococcus agalactiae*. Pus swab durante of amputation surgery of manus dextra digiti III on April 24, 2023 was *Pseudomonas aeruginosa*.
Discussion: Group B Streptococcus (GBS) can manifest as cellulitis, abscess, foot infection, or decubitus ulcer.The patient also had diabetes mellitus as a common underlying condition. A day after the abscess were sent with *Streptococcus agalactiae* results, pus during amputation surgery were sent and resulted *Pseudomonas aeruginosa*. Previous studies reported that *Pseudomonas aeruginosa* can inhibit the growth of *Streptococcus spp.* through excessive production of siderophore and therefore possibly defeating *Streptococcus spp.* to get limited iron. So that the next results, only *Pseudomonas aeruginosa* was found and there was no growth of *Streptococcus agalactiae* colonies.
Conclusions: *Pseudomonas aeruginosa* which was found possibly inhibits the growth of *Streptococcus agalactiae* (antagonistic interactions).

Keywords: antagonistic interactions, *Streptococcus agalactiae, Pseudomonas aeruginosa*

P-084

Culture negative bacteremia in a septic diabetic elderly

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Background: The presence of bacteria in blood is traditionally proven by culture method. However, some bacteria are difficult to culture due to previously administered antibiotics, slow growing or uncultivable features. This case presents a patient with culture negative bacteremia proven by molecular amplification.
Case Presentation: A-72-year-old female is admitted to the intensive care unit with fever and loss of consciousness. She had a history of twice non-hemorrhagic strokes, the most recent happened 5 months ago after which she has only been lying in bed, and eventually developed decubitus in her buttocks. She had fever in the last 2 days, with occasional cough but no respiratory distress. She had qSOFA score 3 or high risk of sepsis. Vomited blood 1 day before. Physical examination and chest x-ray revealed bilateral pneumonia. Laboratory result showed leukocytosis and anemia. Ceftriaxon was given by intravenous route for 5 days. Blood culture revealed negative at 5 days of aerobe incubation at 37oC. Antibiotic was changed to meropenem 1 gr/8h/iv and levofloxacin 750 mg/24h/iv and showed improvement. Molecular identification by 16s RNA revealed positive result.
Discussion: Empiric antibiotics prior to receiving blood culture results can prevent more extensive complications, unnecessary costs, and prolonged treatment. Slow growing bacteria may result negative within a growing duration of normal growing bacteria. Therefore in case of a negative culture result, molecular detection had proven the presence of bacterial DNA in blood.
Conclusion: Blood culture negative patients with signs of sepsis requires other methods to prove the presence of bacteria.

Keyword: septic, bacteremia, culture, molecular identification

P-088

Analysis of referral characteristics of obstetric cases and maternal neonatal outcomes at The University of Mataram Hospital, Indonesia

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Background: The Maternal Mortality Rate in Indonesia shows a downward trend but is still above the target. Various efforts to reduce MMR have been carried out, including a tiered referral system. However, multiple factors affect its implementation.
Objectives: This study investigated the relationships between characteristics and outcomes of obstetric referrals in a type-C hospital in Mataram, Indonesia.
Methods: We retrospectively reviewed the medical records of obstetric patients referred to the University of Mataram Hospital from January 2020 to July 2022. Statistical analysis was conducted using SPSS v.24.
Results: Out of 353 referrals, 52.1% were between 20-29 years old, 38.5% completed senior high school; 86.4% were referred by a community health center; 60.9% from outside Mataram; 45% were nulliparous; 86.7% were in 3rd semester of pregnancy; 86.1% were in labor, and 36.3% were late referrals. Prolonged labor (18.2%) and premature membrane rupture (18.2%) were the most common diagnoses. All mothers were alive, but 10.8% stayed for > 3 days. Fetal/neonatal mortality was 10.9%, and 52.9% were cared for in the NICU > 1 day. A significant association was found between maternal age, referral origin, and maternal morbidity ($p < 0.001$ and $p = 0.001$, respectively). Patient education, gestational age, referral time, and referral delay were significantly associated with fetal/neonatal outcomes ($p = 0.043$; $p = 0.032$; $p < 0.001$, and $p = 0.002$ consecutively).
Conclusions: Education, gestational age, time, and delay in referral were associated with fetal/neonatal outcomes, while age and the referring facility were related to maternal morbidity.

Keywords: obstetric referral, maternal outcome, fetal/neonatal outcome.

P-090

Biofilm formation ability of ESBL-producing bacteria from clinical specimens: A cross sectional study at Dr. Kariadi Hospital, Semarang

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Background: Antimicrobial therapy is complicated by the presence of extended-spectrum beta-lactamases (ESBLs) produced by Gram-negative bacteria (GNB). The situation becomes even more challenging when the bacteria have the ability to produce biofilms.
Objectives: This study aims to determine the proportion of ESBL-producing GNBs that can produce biofilms from various clinical isolates in Dr. Kariadi Hospital, Semarang.
Methods: Bacterial isolates originating from relevant specimens of patients with urinary tract infection (UTI), bloodstream infection (BSI), and chronic wound infection between September-November 2022 were identified and tested for antibiotic susceptibility using the BD Phoenix System. The biofilm production ability was determined in purposively selected GNB isolates using microtiter plate biofilm assay with crystal violet staining.
Results: During the study period, we collected 205 GNB isolates (73 from urine, 71 from blood, and 67 from wounds). ESBLs were detected in 12 (16.44%) urine isolates, 10 (14.08%) blood isolates, and 19 (28.36%) wound isolates. All ESBL-producing GNBs were capable of producing biofilms at varying levels. Strong biofilm producers were found in one *E. coli* isolate from urine, two *E. coli* and two *K. pneumoniae* isolates from blood, and two *E. coli* isolates from wound specimens.
Conclusions: All ESBL-producing GNBs in this study were capable of producing biofilms, albeit at different levels. The clinical significance of these varying levels of biofilm production requires further investigation.

Keywords: ESBLs, *Escherichia coli*, *Klebsiella pneumoniae*, Biofilm

P-094

Association between vaccination status, SARS-COV-2 lineage, and clinical outcomes in COVID-19 patients: Insights from Dr. Kariadi Hospital, Semarang

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Background: Vaccination plays a crucial role in mitigating the COVID-19 pandemic by reducing the risk of infection and the severity of illness or death. However, the continuously mutating SARS-CoV-2 virus can lead to breakthrough infections in vaccinated individuals and those with previous infections.
Objectives: This study aims to describe the vaccination status and lineage of SARS-CoV-2 in relation to disease severity and mortality in COVID-19 patients at Dr. Kariadi Hospital, Semarang.
Methods: In November 2022, COVID-19 patients at Dr. Kariadi Hospital with confirmed positive results through RT-PCR tests (CT value <30) and available clinical data on disease severity were included. Whole genome sequencing was performed on their SARS-CoV-2 samples to determine the viral lineage. Demographic, clinical, and vaccination status data were collected and analysed.
Results: The study encompassed 78 COVID-19 patients. Among them, 57.6% had received a minimum of two doses of the COVID-19 vaccine. The most prevalent lineage was XBB.1 (39.7%), followed by BQ.1 (15.4%) and BA.5.2.6 (8.9%). Severe or critical COVID-19 cases accounted for 14% of the patients, while the remaining exhibited mild to moderate symptoms. Among the 11 patients who succumbed to the disease, 4 were unvaccinated, 1 had received one vaccine dose, 5 had received two vaccine doses, and 1 had received the initial vaccine booster. Notably, the viral lineages showed no significant association with disease severity or mortality.
Conclusions: During November 2022, XBB.1 was the prevailing SARS-CoV-2 lineage detected at Dr. Kariadi Hospital. Vaccinated individuals remained susceptible to COVID-19 infection. Additionally, the identified viral lineages did not demonstrate a significant correlation with disease severity or mortality.

Keywords: SARS-CoV-2, COVID-19, vaccination, lineage, severity

P-095

Detection of opportunistic infections in patients with HIV-AIDS at Dr. Kariadi Hospital

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Background: HIV-AIDS is an advanced stage of HIV which is marked by a drastic decrease in CD4, carries the risk of opportunistic infections and is the main cause of death for 90% of people with AIDS.
Case Presentation: A 39-year-old man with a history of HIV since 2014 has stopped taking drugs. The patient's chief complaint is loss of consciousness. Five months ago diagnosed with tuberculosis with only 2 months of treatment. The patient underwent an HIV reactive screening test, CD4+ 83 cells/µl, anti-Toxoplasma IgG (+) and IgM (-). After 1 week of being treated, CSF examination with Indian ink staining found encapsulated yeasts and culture with Sabouraud Dextrose Agar media where there was growth of Cryptococcus neoformans colonies which were round, creamy white, convex, flat edges and mucoid. This patient had not been treated with antiretroviral (ARV) but was given co-trimoxazole and fluconazole as ARV prophylaxis. Other than that given moxifloxacin and anti-tuberculosis treatment. In the end the patient died after 2 weeks of being treated.
Discussion: HIV-AIDS with opportunistic infections has a very high risk of death. Prevention by conducting HIV screening early on, improving quality of life, taking ARV drugs immediately and ARV prophylaxis is important as prevention of other infections.
Conclusion: In this case HIV-AIDS with Tuberculosis, Toxoplasmosis, Cryptococcocis as an opportunistic infection, is caused by immunosuppression. So that this situation worsens the patient and causes death. Therefore, monitoring the examination and treatment of patients with HIV-AIDS will prevent disease progression.

Keywords: *HIV-AIDS, Tuberculosis, Cryptococcus neoformans, Toxoplasmosis*

P-100

Community Acquired Pneumonia caused by Carbapenem resistant *Acinetobacter baumannii* : A case report

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Background: *Acinetobacter baumannii* often causes nosocomial infections especially in patients with a low immune system who are treated in intensive care units. It is a serious problem because difficult to treat. Carbapenem is the one of choice for *Acinetobacter baumannii* infection with Multi Drug Resistance (MDR).
Case Presentation: A 52-year-old woman was admitted to the hospital with shortness of breath for 6 days before hospitalization. No cough or fever. She has been admitted to the ICU twice. Patients has history of diabetes and hypertension. Patient appeared has malnutrition. Laboratory results showed increase of leukocytes and procalcitonin. Chest X-ray found pneumonia. Direct gram from sputum was found gram-negative coccobacilli. *Acinetobacter baumannii* was identified with Vitek2 System. Result of Maldi-TOF MS, PCR and sequencing also showed similar results. The patient was given amikacin and azithromycin for 5 days. Her clinical condition worsened, and she finally died.
Discussion: Community Acquired Pneumonia (CAP) caused by *A. baumannii* has high morbidity and mortality. The identification often needs additional molecular assay to identified the mechanism of the resistance to antibiotic such as carbapenem.
Conclusion: Infection by *Acinetobacter baumannii* increases the mortality rate because the difficulty of therapy with fewer therapeutic options. Diabetes and malnutrition also make it difficult to treat.

Keywords: *Acinetobacter baumannii,* antibiotic, multidrug resistant, CAP

P-101

Whole genome sequencing of reinfection of COVID-19: One insight from health care worker reinfection case

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Background: Coronavirus disease 2019 (COVID-19) has become significant disease that cause pandemic around the world. Many variants were detected within the globe and may have an important role in transmission capability or reinfection condition. The 'unknown' level of immunity's protection from previous infection and more virulent the virus could lead the reinfection to emerge. By using whole genome sequence, we can analyze the genomic insight within first and second infection and help to understand reinfection in COVID-19.
Case presentation: We studied re-infection in one health care worker in the first wave of pandemic. Our subject was a male nurse, 31st years old. He got reinfection in 3 months after declared negative by RT-PCR. The SARS-CoV2 confirmation was conducted using real-time PCR with multiplex gene target Orf1ab and E. Confirmation of reinfection were done by genomic analysis using Oxford Nanopore Technologies. Library preparation and sequencing were done using ARTIC protocol that targeted whole genome sequencing.
Discussion: In the second infection, he had a worsen clinical symptoms and more mutation in the allele, and have a dominant D614G mutation in spike (S) protein, as this type is predominating mutation make the viral more stable that make the virus transmit efficiently.
Conclusion: The result concluded that reinfection happened in worsen clinical symptoms and distinct genomic variation in each episode of infection.

Keywords: COVID-19, reinfection, genomic sequence

P-103

Correlation of sputum Gram stain scoring and semi-quantitative culture to quantitative culture in identifying the etiology of pneumonia

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Background: Pneumonia is a major health problem and is associated with high morbidity and mortality. Microbiology examination is very important in identifying the etiology of pneumonia and guide the selection of antimicrobials. There is no uniformity of sputum examination methods in identifying the etiology of pneumonia. Some laboratories considered that quantitative culture is more accurate than semi-quantitative culture in determining whether an isolate on a sputum culture is a true etiology or a colonizer. However, many laboratories use semi-quantitative culture for sputum examination.
Objectives: To analyze the correlation and agreement between sputum Gram stain scoring and semi-quantitative sputum culture results with quantitative sputum culture results in identifying the etiology of pneumonia.
Methods: This study is a prospective observational analytic design with total of 46 sputum samples were subjected to microscopic examination, semi-quantitative and quantitative culture. Spearman's correlation and Kappa agreement tests was carried out between microscopic bacterial count and semi-quantitative culture results against quantitative culture results.
Results: In a total of 98 isolates grew on the sputum cultures, most of them were *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Acinetobacter baumannii*. Microscopic bacterial count strongly correlated with quantitative sputum culture results ($r= 0.677$, $p <0.001$), but the level of agreement in determining the role of bacteria as a causative agent or a colonizer was moderate ($\kappa = 0.469$). Semi-quantitative and quantitative culture results were very strongly correlated ($r= 0.817$, $p <0.001$) with a good level of agreement between the two methods ($\kappa = 0.723$).
Conclusion: Microscopic bacterial count of good quality sputum can be used as a preliminary and a complementary test to sputum culture to facilitate the interpretation of sputum cultures results. The semi-quantitative and quantitative sputum culture methods are comparable and can be substitutive for each other. A microbiology laboratory should select the quantitative or semi-quantitative sputum culture according to the resources availability in the laboratory.

Keywords: pneumonia, sputum microscopic examination, semi-quantitative sputum culture, quantitative sputum culture

P-104

Drug-resistant tuberculosis pattern in Indonesia: A systematic review

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Background and Objectives: Drug-resistant tuberculosis (DR-TB) pattern in Indonesia is vaguely determined, even with the global emergence of multi-drug tuberculosis (MDR-TB) and extensively drug-resistant tuberculosis (XDR-TB). Thus, we conducted a systematic review according to Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) protocols to better understand the DR-TB pattern in Indonesia.
Methods: A systematic literature search was performed using keywords in Pubmed, Science Direct Scopus, and Google Scholar databases. We critically reviewed 178 articles and selected eight studies that met the criteria of DR-TB cases in Indonesia.
Results: We analyzed 1415 DR-TB patients, consisting of mono-resistant (403, 28.5%), poly-resistant (362, 25.6%), multi-drug resistant (571, 40.4%), pre-extensively drug-resistant (pre-XDR) (47, 3.3%), and XDR (32, 2.3%) cases. Of those, 758 DR-TB cases were eligible to construct the pattern. The most frequent DR-TB cases were reported for rifampicin (706, 93.1%), followed by isoniazid (325, 42.9%), ethambutol (95, 12.5%), streptomycin (79, 10.4%), kanamycin (7, 0.9%), amikacin (7, 0.9%), pyrazinamide (2, 03%), capreomycin (1, 0.1%), levofloxacin (1, 0.1%), and moxifloxacin (1, 0.1%). There is no information available on bedaquiline and/or delamanid resistance.
Conclusion: This finding clearly emphasizes that pre-XDR and XDR TB cases are alarming, despite the massive problem of first-line drug resistance among DR-TB cases in Indonesia. Responsibly, this situation requires immediate response and evaluation to prevent further XDR emergence in limited drug availability.

Keywords: drug-resistant tuberculosis, anti-tuberculosis drug, pattern, susceptibility

P-105

Human milk protein-lipid complex (HAMLET) enhances antibiotic and macrophage function

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Background: Human milk, apart from its nutritional component, also comprises immunological components that serve as bioactive molecules and cellular components. Alpha-lactalbumin (α-LA) a protein found in human milk, can transform into complex human α-lactalbumin made lethal to tumor cells (HAMLET). Human milk provides specific fatty acids such as oleic acid, that are believed to be essential to preserving the globule state HAMLET molecule.
Objectives: To learn more about HAMLET's impact on bacteria and it effect on antibiotic-resistant organisms.
Methods: The literature search was conducted through both PubMed and Science Direct Scopus databases using specified keywords. We implemented the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines for conducting our review. We critically reviewed the initial 56 studies that suited the criteria, 15 scientific papers fulfilled information about HAMLET molecule dan 8 studies delivered the information needed.
Results: Results showed that HAMLET mostly affected gram-positive bacterial are *Streptococcus pneumoniae, Streptococcus pyogenes, Streptococcus agalactiae, Mycobacterium tuberculosis, Staphylococcus aureus, Acinetobacter baumanii, and Moraxella catarrhalis.* Direct cytotoxic activity as a result of glycolysis, histone deacetylase, and ion transport as part of the bacterial killing mechanism that induces cells to undergo apoptosis. HAMLET further enhances macrophage function as an immune cellular component and increases sensitivity to bacteria that are resistant to antibiotics by increasing cell-antibiotic binding.
Conclusion: The findings of this study imply that HAMLET's antibacterial properties can be employed as a combination therapy for organisms that are resistant to antibiotics and require additional study.

Keywords: human milk, hamlet, antibiotic resistance, macrophage

P-106

Challenges on discovery potential biofilm formation *Candida parapsilosis* invasive infection

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Background: Invasive infection by *Candida parapsilosis* became a significant threat to the hospital inpatient. The biofilm formation as the virulence factor in *Candidiasis parapsilosis* has a complex mechanism where several genes are involved. *EFG1* regulates hyphal growth in candida while *ACT1* is notable for trehalose catabolism to support the viability of environmental stress conditions acts as a housekeeping gene.
Objectives: This study aims to discover the potential biofilm formation of isolated *Candidiasis parapsilosis* and analyzed the clinical status.
Methods: Blood samples that were subjected to microbiological culture examination were collected at a tertiary referral hospital in Surabaya from 2021 to 2022. Isolates that were identified as *Candida parapsilosis* were stored. A sufficient number of isolates underwent DNA extraction and proceed to gene amplification examination targeting *EFG1* and *ACT1* according to available protocol. The outcome of gene amplification along with existing clinical data were then analyzed.
Results: There were 42 isolates of *Candida parapsilosis* collected from blood samples. The majority of them (73.8%) were pediatric patients. Of those all recorded Invasive *Candida parapsilosis* infection, there were 33,3% deceased cases. Isolates which continued to genes amplification unable to detect *EFG1* and *ACT1*.
Conclusion: Based on the study of those isolates, *EFG1* and *ACT1* genes were not contribute as virulence factors. Regarding the intricacy molecular of biofilm formation mechanism, other genes such as *BCR1, RBT1,* and *MKC1* are necessary to investigate. *Candidemia* remains a threat with high mortality rate.

Keywords: *Candida parapsilosis*, Candidemia, biofilm formation

P-113

Biofilm production of pathogen-causing catheter-associated urinary tract infection in intensive care unit at several hospitals in Yogyakarta, Indonesia

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Background: Catheter-associated urinary tract infections (CAUTIs) are the second most common healthcare-acquired infections (HAIs). The use of invasive devices such as urinary catheters is believed to be one of the risks of higher rates of HAIs. Indwelling urethral catheters account for about 80% of urinary tract infections. Catheters could play a role in microbial colonization and biofilm formation. Biofilm-related infections are particularly hard to treat as microbial cells in biofilm become tolerant and resistant to antibiotics and immune responses.
Objectives: This research was conducted to investigate the pattern of bacteria causing catheter-associated urinary tract infections and their ability to form biofilms.
Methods: Clinical isolates were obtained from adult patients who were admitted to ICU and were catheterized using a Foley catheter for more than 48 hours with a positive urine culture at Sardjito General Hospital and UGM Academic Hospital from November 2022 - April 2023. Clinical isolates were identified with Vitek 2 compact, as well as its antibiotic sensitivity. Biofilm-production test were tested by using microtiter plate assay.
Results: During the study period 48 urine clinical isolates were obtained. *Escherichia coli* (25%) was the predominant isolate, followed by *Acinetobacter baumannii* (23%), *Enterococcus faecalis* (17%), *Pseudomonas aeruginosa* and *Enterococcus faecium* (10%). *Klebsiella pneumoniae* and *Enterobacter cloacae* (4%), *Burkholderia cepacia*, *Staphylococcus haemolyticus*, and *Staphylococcus aureus* (2%) were the least common isolates in this study. Strong, moderate, and weak biofilm producers were found in 21(44%), 10 (21%), and 14 (29%) isolates respectively.
Conclusion: Almost all clinical isolates had the ability to form biofilms, Further research is needed to determine the clinical significance of these varied degrees of biofilm development.

Keywords: urinary tract infection, healthcare-acquired infections, biofilm production

P-114

Antiradical scavenging activity of various fractions of from ashitaba (*Angelica keiskei*) herbs methanolic extract against DPPH (1,1-diphenyl-2-picrylhydrazyl)

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Background: Acne vulgaris is a chronic inflammation of the skin pilosebasea unit, one of which is caused by oxidative stress due to the release of reactive oxygen species (ROS). Oxidative stress conditions can be handled by using natural antioxidants, namely Ashitaba (*Angelica keiskei*). Ashitaba contains phenolic and flavonoid compounds which have the potential to be antioxidants.
Objectives: This study aims to identify flavonoids and phenolics compounds in each fraction of Ashitaba herbs and determine the antioxidant activity of the chloroform, ethyl acetate, and water fraction of Ashitaba herbs extract against *1,1-diphenyl-2-picrylhydrazyl* (DPPH) radicals.
Methods: Methanol 80% extract from ashitaba herbs is fractionated using chloroform, ethyl acetate, and water solvents. Each ashitaba herb fraction was tested for qualitative phytochemical screening with a tube test and thin layer chromatography method. Afterward, the antioxidant activity of the Ashitaba herbs fraction was analyzed with the DPPH inhibition method with ascorbic acid as standard using a UV-Vis spectrophotometer. The IC_{50} value is calculated from the percentage inhibition of each fraction and then analyzed statistically using One-Way ANOVA with Statistical Program for Social Science (SPSS) software.
Results: The result of the qualitative phytochemical screening assay showed each fraction of Ashitaba herbs contains flavonoids and phenolics compounds. the chloroform, ethyl acetate, and water fraction had an antioxidant activity against DPPH radicals with IC_{50} values of 164.22 ± 5.68 ppm; 8.70 ± 0.12 ppm; and 243.60 ± 8.14 ppm, respectively. The ethyl acetate fraction showed a value close to standard ascorbic acid with IC_{50} 2.37 ± 0.05 ppm.
Conclusion: The ethyl acetate fraction had the strongest antioxidant activity compared to other fractions and is in the same category of antioxidant strength as standard ascorbic acid.

Keywords: *Angelica keiskei*, antioxidants, DPPH, flavonoids, fraction, phenolics

P-115

Examining referral communication in maternal healthcare: Perceptions, gaps, and opportunities for improvement

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Background: Effective communication is crucial in maternal referral for high-quality and continuous care. However, limited understanding exists regarding PCPs' perceptions and experiences with referral communication, specifically regarding feedback from specialists.
Objectives: This study aimed to explore the frequency and content of referral and reply letters as perceived by maternal PCPs. It also sought to examine PCPs' perspectives and experiences with referral communication, focusing on reply letters and feedback.
Methods: A convergent parallel mixed-methods approach was used, including a survey assessing the frequency and content of referral and reply letters, and semi-structured interviews providing in-depth insights. Participants included actively involved GPs and midwives from ten purposively selected CHCs in West Lombok.
Results: Among 119 respondents (16 GPs and 103 midwives), 74.8% consistently sent referral letters containing patient history, examinations, diagnoses, and management details. However, 41.2% reported rarely or never receiving reply letters. Common information in reply letters included diagnoses (63%), management (42.9%), and follow-up recommendations (41.2%). Interviews with 10 GPs and 10 coordinating midwives identified various communication channels and the role of local government in facilitating the communication. Nonetheless, there was a lack of timely and adequate feedback, resulting in ineffective care. PCPs perceived an imbalance of responsibility in referral communication with specialists, with more responsibility placed on communication prior to referral than on the feedback.
Conclusion: This study highlights a gap in communication feedback, emphasizing the need to address the perceived responsibility imbalance. These measures can enhance referral processes and contribute to more efficient and patient-centred maternal healthcare referrals.

Keywords: referral communication, maternal healthcare, primary healthcare provider, reply letters, referral feedback

P-123

Carbapenem-resistant *Acinetobacter baumannii* (CRAB) in a patient with chronic kidney disease, diabetes mellitus, and pneumonia

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Background: *Carbapenem-resistant Acinetobacter baumannii* (CRAB) is considered as priority list bacteria by WHO. CRAB often cause severe condition of Health-Care Associated Infections (HAIs). Here we report CRAB bacteremia in chronic kidney disease patient. Nosocomial CRAB generally occurs in patients treated in the intensive care unit. Combination therapy is often necessary for this condition.
Case presentation: A 76-year-old man had CKD with routine haemodialysis treatment and Diabetes Mellitus. Physical examinations showed of 120 bpm, hyperpyrexia (40.3ºC), and pitting oedema in the lower extremities. His chest X-ray suggesting bilateral pneumonia, his leukocyte count was 21.0x10^3/ul, and procalcitonin level was 100.7. Blood, sputum, and urine specimen were obtained subject for culture and antibiotic susceptibility test by using Vitek-2-Compact. CRAB isolates with similar resistance patterns (only sensitive to Amikacin) were isolated from those specimens. He was diagnosed CRAB bacteraemia, Bilateral Pneumonia, and UTI. He was treated with antibiotics comprising of amikacin 350mg/day and azithromycin 500mg/day.
Discussion: The patient was prone to have opportunistic infection, due to comorbidities and multiple invasive device application. The treatment options for CRAB infection are antibiotics with different synergistic activities. Our patient was treated with amikacin, considering the antibiotic susceptibility test result, and azithromycin for Bilateral Pneumonia. Unfortunately, the patient was died after 54 days of treatment with Amikacin.
Conclusion: CRAB bacteraemia is associated with a high fatality rate and its optimal treatment has not been established.

Keywords: *Carbapenem-Resistant Acinetobacter baumannii (CRAB),* bacteremia

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Acetic acid tampons in otomycosis after canal wall down mastoidectomy

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Background: Otomycosis is a fungal infection of the canal auditory external (CAE). Symptoms of otomycosis include itching, hearing loss, pain and ringing in the ears. Otomycosis cases are often found in tropical and subtropical countries with high humidity, such as Indonesia. Canal wall down (CWD) mastoidectomy surgery causes the posterior part of the CAE to disappear, as a result the mastoid cavity and CAE merge into a large cavity, making it difficult to provide otomycosis therapy with ointment or drops preparations.
Case presentation: A 59-year-old woman complained of frequent ringing in her left ear, denial of pain and itching. The patient has a history of CWD mastoidectomy 3 years ago. Otoscopy examination of the left CAE found white debris and fine filaments. Fungal culture examination was obtained *Aspergillus fumigatus*. Patients received 3% acetic acid therapy 2 times a week, inserting acetic acid tampons for 20 minutes, then removing them. Complaints improved and the patient was declared cured.
Discussion: Acetic acid is a non-specific therapy option in the treatment of otomycosis, especially otomycosis after CWD mastoidectomy which is difficult to treat with antifungal drops or ointments. Acetic acid causes the separation of the fungal cells from the CAE wall where the fungal cells attach. Acetic acid can disrupt the acid-base balance, causing fungal cell death and inhibiting fungal cell proliferation.
Conclusion: The action of acetic acid tampons can be considered as a non-specific therapy in otomycosis after CWD mastoidectomy.

Keywords: acetic acid, canal wall down mastoidectomy, otomycosis, *Aspergillus fumigatus*

P-163

Dominant Gut Microbiota Profile In Pediatric and Adult Patients With Diarrhea

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Objectives: The gut microbiota plays an important role in maintaining gut health and is linked to various gastrointestinal conditions such as inflammatory bowel disease and irritable bowel syndrome. Antibiotic use for hospitalized patients can have several negative effects on the gut microbiota, including reduced species diversity, altered metabolic activity, and the development of antibiotic resistance. Gut microbiota dysbiosis may lead to diarrhea in hospitalized patients, including in both adult and children. One microbiota will be more dominant than the others, which results in triggering diarrhea
Methods: This study used secondary data taken from the WHONET 2022 software and is a retrospective study using a cross-sectional approach to determine the profile of the dominant gut microbiota from faecal specimens. Stool samples were taken from hospitalized patients with complaints of diarrhea and sent to the Clinical Microbiology Laboratory of FMUI Jakarta during the period 2018 to 2022. A total of 313 stool specimens, of which only 271 samples were included in the study, because 42 samples obtained unknown microorganism
Results: Two microorganisms were found most in adult and pediatric patients, namely Escherichia coli and Klebsiella pneumoniae were 119 (43.9%) and 56 (20.66%) respectively. The third most common microorganism was found to be different between adult and pediatric patients. The third dominant microbiota in pediatric patients were Enterobacter cloacae, while in adults were Candida albicans, 23 (8.49%) and 18 (6.64%) respectively. The differences in intestinal microbiota profiles in adult and pediatric patients found in this study provide new insights insights in guidelines for the management of diarrhea in hospitalized adults and children.
Conclusions: Overall, restoring the gut microbiota profile of pediatric and adult inpatients with diarrhea is an important point for management. Giving probiotics is one of the best treatment for children who are hospitalized with diarrhea, whereas in adult patients it must be accompanied by restrictions on the long and excessive use of broad-spectrum antibiotics.

Keywords: Adult patients, broad-spectrum antibiotics, gut microbiota, pediatric patients, probiotic

ABSTRACTS FOR E-POSTER EXHIBITION

P-002

Antibiotic susceptibility patterns of proteus mirabilis isolated from urine at Prof. Dr. I.G. N. G Ngoerah Hospital During 2017-2022

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Background: Proteus mirabilis is a gram-negative, bacilli, known as a healthcare-associated infection agent from patients with a history of recurrent infections, structural abnormalities of the urinary tract, or urethral instrumentation. The local antibiogram of Proteus mirabilis is needed as a guide for empirical antibiotic therapy.
Objectives: The aim of this study was to determine the antibiotic susceptibility pattern of Proteus mirabilis isolated from urine samples at Prof. dr. I.G. N. G Ngoerah Hospital.
Methods: This retrospective cross-sectional descriptive study was performed at the Clinical Microbiology laboratory of Prof. dr. I.G. N. G Ngoerah Hospital. Data was obtained for 5 years (January 2017-December 2022). All urine cultures were included in this study, while bacterial identification and susceptibility test were conducted using Vitek-2 Compact (BioMerieux®, France).
Results: A total of 181 isolates Proteus mirabilis were isolated from urine specimens, where 88 samples were from mid-stream and 93 from urine catheters. The antibiogram results showed that 98,3% of isolates were still susceptible to amikacin, 96,1 % susceptible to meropenem, 94,5% susceptible to ceftazidime, 91,2% susceptible to ertapenem and cefepime, 90,6% susceptible to aztreonam, 88,4% susceptible to ceftriaxone, and then 84% susceptible to piperacillin-tazobactam.
Conclusions: Proteus mirabilis from urine samples at Prof. dr. I.G. N. G Ngoerah Hospital still showed good susceptibility to antibiotics amikacin, meropenem, ceftazidime, ertapenem, cefepime, aztreonam, ceftriaxone, and piperacillin-tazobactam. Therefore, it can be considered as empirical therapy for complicated UTIs. Prudent use of empirical therapy is important for preventing healthcare-associated infection.

Keywords: urine, infection, Proteus mirabilis, gram-negative bacteria, susceptibility pattern

P-005

Methicilin-sensible *staphylococcus aureus* (mssa) pericardial effusion causing cardiac tamponade

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Background: Bacterial infection of the pericardial space is an uncommon case that always fatal if untreated. The mortality rate in treated patients is 40%, and death is mostly due to cardiac tamponade.
Case Presentation: We present a 29 years old male patient with severe dispnea who was found to have cardiac tamponade secondary to a purulent pericardial effusion. He was also had End Stage renal Disease with regular hemodialysis. The diagnosis was suggested by clinical context, imaging, pericardial fluid analysis and was confirmed by culture. MSSA were isolated from 2 times pericardial fluid, peripheral blood and exit site catheter swab that were growth in Blood Agar only. Identification and Susceptibility to antibiotics was assessed by Vitek2 Compact automated system (BioMerieux) and were sensitive to penicillin, cephalosporin, quinolone, aminoglycoside except macrolides. Admission and Cefazolin was begun for 5 days. He responded well to parenteral antibiotics also pericardial drainage and made a full recovery.
Discussion: Moreover, purulent pericardial effusion is a rare condition that carries a high mortality rate as it can rapidly progress to tamponade and death. In developing countries, *Mycobacterium tuberculosis* is the most frequent cause of acute pericarditis followed by *Haemophilus, Staphylococcus and Streptococcus* (rheumatic pancarditis). Prior to the advent of antibiotics, this event was common as the result of hematogenous seeding such as catheter related hemodialysis in this patient.
Conclusions: Prompt diagnosis of purulent pericardial effusion also initiation of appropriate antibiotic and pericardial drainage treatment are the mainstays of successful management of this rare but potentially lethal entity.

Keywords: *Staphylococcus aureus*, Bacterial Pericarditis, Cardiac Tamponade

P-010

Gram positive bacteria as the majority of causative pathogen of infective endocarditis at Prof. dr. I.G. N. G Ngoerah Hospital during 2021-2023

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Background: Infective endocarditis (IE) is a severe heart valve infection that can result in significant morbidity and mortality if left untreated.
Objectives: This study aimed to determine the trend of causative pathogen of IE isolated from blood samples at Prof. dr. I.G. N. G Ngoerah Hospital.
Methods: A descriptive cross-sectional retrospective study was conducted at the Clinical Microbiology laboratory of Prof. dr. I.G. N. G Ngoerah Hospital, covering three years from January 2021 to April 2023. Only blood cultures involving possible IE with minimum of 3 bottles of blood samples were considered for this research. The bacterial identification and susceptibility test were conducted using Vitek-2 Compact (BioMerieux®, France)
Results: 17 patients suspected of IE were found to have positive blood cultures. Gram-positive bacteria were the majority of causative pathogens, except for one case caused by *Escherichia coli* (5.88%). *Streptococcus mitis/streptococcus oralis* slightly dominated as the causative pathogen of 3 cases of IE (23.53%) alongside *Streptococcus suis* (23.53%), followed by other pathogens such as 11.76% *Streptococcus sanguinis* and *Streptococcus mutans* respectively, and 5.88% *Streptococcus hominis ssp hominis*, *Staphylococcus haemolyticus*, *Enterococcus faecalis*, *Gemella morbillorum*, *Kocuria kristinae*, and *Streptococcus gallolyticus ssp gallolyticus* respectively.
Conclusions: Gram-positive bacteria were found to be the primary causative pathogen in infective endocarditis at Prof. dr. I.G. N. G Ngoerah Hospital. These may help healthcare providers choose the appropriate empirical antibiotic therapy and improve clinical outcomes for patients with IE.

Keywords: blood culture, gram-positive bacteria, infective endocarditis.

P-011

Case report of kocuria kristinae from blood culture in neonatal sepsis at Prof. Ngoerah General Hospital, Bali

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Background: *Kocuria kristinae* bacterial infection is commonly associated with premature babies with low birth weight. A study has reported that *K. kristinae* infected above 50% of premature infants using long-term intravenous catheters. From all case reports, vancomycin was the most common empiric therapy for this infection. Meanwhile, culture for sensitivity tests is still needed.
Case Presentation: The patient was a male newborn by cesarean section due to fetal distress and placenta previa totalis. The patient was assessed as a preterm infant with low birth weight, mild asphyxia, and early onset neonatal sepsis. The patient was intubated and using a peripherally inserted central catheter (PICC). The result of 2-sided blood culture showed *K. kristinae* infection using VITEK 2 COMPACT (Biomeriuex®). Vancomycin was given after this blood culture result came for 17 days and the outcome was good.
Discussion: *K. kristinae* is a facultative anaerobic Gram-positive bacterium, arranged in tetrads and produces pale cream nonhemolytic colonies on blood agar. In this case, premature labor, low birth weights, and prolonged intravascular catheter use were suspected as the major risk factor for bloodstream infection. Treatment has successfully used monotherapy with vancomycin, providing good therapeutic outcomes and improved patient prognostic.
Conclusions: *K. kristinae* can cause infections in premature and immunocompromised pediatric patients using long-term intravenous catheters.

Keywords: Catheter-related bacteremia, *Kocuria kristinae*, low birth weight, premature

P-013

The profile of candida species causing bloodstream infection in Saiful Anwar General Hospital in three years

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Background: Fungal bloodstream infection is increasingly reported, especially in critical care due to its contribution to high morbidity and mortality. It has been long concluded that *Candida albicans* is most common cause, yet other *Candida* species are still rarely mentioned.
Objectives: The goal of this work is to learn the profile of *Candida* species as the probable pathogenic fungi responsible for bloodstream infections in Saiful Anwar General Hospital for three years (2019-2021).
Methods: Data were collected from inpatient ward recorded in WHONet database. Data was categorized into intensive care unit (ICU) and non-ICU. We found 49 cases with confirmed fungal bloodstream infection during the three years, including 26 cases in ICU.
Results: As reported in many other studies, *C.albicans* is still a major fungus to be considered, of which it represented 29.17% of cases in the non-ICU wards, and 26.92 % cases in ICU. Interestingly, we found that *C. tropicalis* represented 17.39% of the cases in ICU, while also represented 30.77% of cases in the ICU. This result showed that during three years, *C.tropicalis* caused more bloodstream infection in ICU than *C.albicans*. Our study also shows changes in the frequency of various *Candida* species in three years, including the increase in number and proportion of bloodstream isolates. The changes included a decrease in frequency of *C. albicans* and an increase in other species, particularly *C. tropicalis* in ICU patients.
Conclusions: From this data we suggested to continue our surveillance to monitor the dynamics of *Candida* species in causing bloodstream infection.

Keywords: fungal bloodstream infection, Candida

P-015

Epidemiological profile of candiduria in Saiful Anwar General Hospital Malang 2022

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Background: The incidence of fungal urinary tract infections (UTI) has becoming more concerning. The use of broad-spectrum antimicrobial agents, corticosteroids, immunosuppressive and cytotoxic drugs in hospitalized patients, causes an increase of fungal UTI cases. Fungal UTI, are most commonly caused by Candida species.
Objectives: The purpose of this study was to determine the incidence of candiduria in patients admitted during 1st January 2022 - 31st December 2022 in Saiful Anwar General Hospital.
Methods: This study is descriptive retrospective study using Urine specimens sent to Saiful Anwar general Hospital's Microbiology Laboratorium during January- December 2022. The organism was identified using VITEC 2 system and we analyzing data using WHO NET software.
Results: During 1 January 2022 - 31 December 2022 were 902 urine samples, with 23% came out positive for fungal infection. The dominant species is *Candida albicans* (44%) followed by *Candida tropicalis* (36%). We also conduct drug sensitivity test, with almost all *Candida Sp.* Still sensitive to Fluconazole, Caspofungin and Ampothericin B. Fungal urinary tract infections, are most commonly caused by Candida species with *C. albicans* as the most common species.
Conclusions: Optimizing CAUTI bundle and hygiene is very important to lower the incidence of candiduria

Keywords: Candiduria, epidemiological profile

P-016

Necrotizing fasciitis caused by methicillin-sensitive staphylococcus aureus: A case report

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Background: Necrotizing fasciitis is a severe life-threatening bacterial infection, affecting the skin, subcutaneous tissue, and connective tissue that surrounds muscles, nerves, and blood vessels. Certain risk factors such as a weakened immune system and a previous history of skin infections can increase the likelihood of developing necrotizing fasciitis. In this case report, we present a patient with malnutrition and a history of skin infections, who subsequently developed necrotizing fasciitis.
Case presentation: A 12-year-old boy presented with a painful pus-filled skin blister and scab on the upper left side of his chest, a month prior to hospitalisation. Similar lesion on his face developed six weeks earlier. Patient initially had fever, 3 days prior to the skin blistering. Blood tests showed an elevated white blood cell count. Microbiological evaluation of lesion demonstrated a Methicillin-sensitive *Staphylococcus aureus* (MSSA) infection. This result was confirmed by matrix-assisted laser desorption/ionization (MALDI) and nucleic acid amplification tests (NAAT). Patient's condition improved after 7 days of treatment with oral metronidazole and cefadroxil, and also gentamicin cream.
Discussion: This case highlights the potential severity of necrotizing fasciitis, particularly in patients with underlying risk factors such as malnutrition and a history of skin infections. Early recognition, prompt diagnosis, and appropriate antibiotic treatment are crucial in managing this condition.
Conclusion: Clinical microbiologist should maintain "a rapid awareness" on the possibility of necrotizing fasciitis in patients presenting with skin infections accompanied by systemic symptoms, especially those with risk factors.

Keywords: Necrotizing fasciitis, Malnutrition, Methicillin-sensitive *Staphyloccus aureus*, rapid detection

P-017

A case report of mixed fungal skin infection due to Trichophyton rubrum and Trichosporon-like fungi: the need of additional molecular assay for fungal identification

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Background: Superficial fungal infections of the skin are most commonly caused dermatophytes such as Trichophyton genus. Mixed superficial fungal infections may occur in some cases, and often isolated from an immunocompromised people.
Case report: A 56-year-old man presented with complaints of itchy red-black patches accompanied by fine scales on almost the entire skin surface. Initially on the hands, then spread to almost the whole body after 2 years. History of irregular treatment/control. Immunocompromised condition unconfirmed. The patient works as a chicken farmer. Microscopic examination of skin scraping from thigh and abdominal areas revealed hyphae-like structure. *Trichophyton rubrum* and trichosporon-like fungi were grown on Sabouraud dextrose agar after 14 days of incubation. Identification with matrix-assisted laser desorption/ionization (MALDI) confirmed the species as *Trichophyton rubrum* and *Trichosporon asahii*. while two times of partial sequencing of the last isolate refers to *Trichophyton interdigitale*. Patient' symptoms were receded after 4 days application of 2% Miconazole ointment.
Discussion: Mixed fungal skin infections can be caused by a combination of dermatophytes and non-dermatophytes. Unfortunately, since identification of these superficial fungi are mostly relied on microscopic examination, the accuracy of species identification is varied. Using molecular assays significantly improve the accuracy despite still some conflicting results still can be found between MALDI and genome sequencing as an example.
Conclusion: Here we demonstrated the need of additional molecular assays in determination of fungal species in clinic

Keywords: *Trichosporon asahii*, *Trichophyton rubrum*, mixed fungal skin infection, MALDI, molecular assays

P-019

A case report: subperiosteal abscess, mastoiditis caused by enterococcus avium and bacteroides ovatus

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Background: Subperiosteal abscess is one of complication of otitis media. Enterococcus avium is a rare pathogen in humans. Here, we report the case of periosteal abscess and mastoiditis due to E. avium in a man with chronic otitis media since childhood.
Case Presentation: A 21-year-old man with 4-day history of right preauricular swelling, otalgia, and hearing loss was admitted to the emergency room. An examination showed swelling, edema, and hyperemia at right retroauriculer, fluctuate appearance and pain on palpation. The laboratory results indicated leucocytosis. A CT-scan showed bilateral otomastoiditis accompanied by choleasteaome in dextra. The patient underwent aspiration in mastoid abscess and specimen was sent for culture. Microorganism was identified as E. avium and Bacteroides ovatus using Vitek 2 Compact and Maldi-TOF MS. Patient was then treated by ceftriaxone and metronidazole intravena for 7 days in hospital. He was discharged with oral antibiotics, ciprofloxacin. Two weeks later, patient was readmitted and underwent mastoidectomy of canal down dextra and abscess drainage. The microbial examination was again performed and results revealed similar bacteria that susceptible to benzylpenicillin and ampicillin.
Discussion: E. avium (formerly known as group Q Streptococcus), although E. avium is not often associated with the etiology of acute otitis media, mastoid abscess, the presence of this case may be considered as an etiologic agent in the future.
Conclusions: Early diagnosis and treatment must be immediately enforced by finding clinical manifestations and supporting examinations. Management of debridement and appropriate use of antibiotics is very important in avoiding further complications.

Keywords: subperiosteal abscess, *Enterococcus avium, Bacteroides ovatus*

P-020

Acute osteomyelitis on os tibia sinistra: Co-infection of acid-fast bacillus and methicillin-susceptible staphylococcus aureus

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Background: Tuberculosis osteomyelitis is soft tissue and bone inflammation caused by *Mycobacterium tuberculosis* infection and in most case due to primary pulmonary tuberculosis infection. The prevalence of extraperitoneal tuberculosis in the world is 20-40 %. 10-25% of those cases are musculoskeletal tuberculosis including osteomyelitis.
Case presentation: A 43-year-old male hospitalized with infected wound on his left leg since a week before admission. Patient has history of chronic occasional coughing and diabetes mellitus for the last 10 years. Laboratory results showed an increase of white blood cells in blood. Gram-positive cocci and acid-fast bacilli were found during microscopic analysis of wound specimen. Using VITEK2 system, Maldi-tof-MS and molecular identification assay; *S. aureus* and *M. tuberculosis* were identified. Bacterial examination of patient's sputum also positive for *M. tuberculosis*. Clindamycin was given along with anti-tuberculosis medication. Patient's condition was improved after 5 days of therapy and patients was discharged.
Discussion: Osteomyelitis is often caused by gram positive bacteria and it can be aggravated by the immunocompromised condition such chronic infections. Tuberculous osteomyelitis can be a result of lymphohematogenous spread of *M. tuberculosis* from primary focus in lung, and this patient has primary tuberculosis focus in his lung.
Conclusion: In case of tuberculous osteomyelitis, finding the primary focus is the key to understand the route and pathogenesis of this infection. Therefore, the right treatment can be given in-time.

Keywords: *Staphylococcus aureus, Osteomyelitis, Mycobacterium.*

P-021

Utilization of molecular assays for species determination of corynebacterium: a case report

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Background: *Corynebacterium striatu*m is a normal flora of the skin and mucous membranes which often found as a contaminant. Recently, Corynebacterium striatum has been recognized as a pathogen in immunocompromised hosts. In some cases, it has been reported as a primary cause of infection such as postoperative wound infections.
Case report: An 18-year-old man was referred to hospital, with postoperative wound infection post thyroid abscess excision. He complained a progressive painful mass in neck for a month accompanied by fever and pain when swallowing. A ruptured abscess with enlarged cervical lymph node were noted during examination. Microscopic evaluation showed *gram*-positive rods which was later identified as *Corynebacterium spp.* Further identification with Matrix-assisted laser desorption/ionization (MALDI-TOF) confirmed the species as *Corynebacterium striatum*, and this result was supported also by partial sequencing of isolate' 16S ribosomal RNA. After completing a 7-day course of intravenous ceftriaxone, the patient symptoms were improved.
Discussion: Surgical site infections are a cause of high postoperative morbidity and often require prolonged antimicrobial administration. Given the fact that *Corynebacterium striatum* isolates is still sensitive to most beta-lactams antibiotics, restriction on antibiotic administration need to be strictly regulated. Since current automatized assay still not sensitive enough to identify this bacterium, therefore it is necessary to carry out another method which has hight sensitivity and specificity such as MALDI or PCR.
Conclusion: in case of Corynebacterium, the need for additional identification assay such as MALDI is crucial for species identification.

Keywords: surgical site infection, Corynebacterium, species identification, MALDI, molecular methods

P-023

The effect of particle size on chemical composition and antioxidant activity of sea urchins from The Coastal Area of Lombok Island

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Background: Reducing sample particle size is one of the most common techniques to improve biological activity of bioactive compounds.
Objectives: This study will identify the effect of particle size on chemical composition and antioxidant activity of sea urchin from the coastal area of Lombok Island.
Methods: Sample preparation produced sea urchin shell powder with particle sizes <45 µm, >45 µm, <125 µm, >250 µm, and >2000 µm. Each sample was extracted using cold maceration method with 70% ethanol p.a. GC-MS is used to see the composition of chemical compounds in the sample and the antioxidant activity is known through the DPPH free radical scavenging assay.
Results: This study results that the smaller the particle size, the more compounds that can be detected through GC-MS. However, particle size >45 µm shows the most abundant chemical composition (34.95% of major chemical compounds and 97.28% of total accumulative compounds) and the highest DPPH free radical scavenging activity (26.77%).
Conclusions: In conclusion, reducing the particle size can increase the bioactivity of sea urchin shell samples, however further modifications are needed to obtain better results.

Keywords: Sea urchin, Antioxidant, Particle size reducing

P-024

Case report of ceftriaxone-resistance streptococcus suis in patient with meningoencephalitis at Prof. Ngoerah Hospital, Bali

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Background: *S. suis* is a facultative anaerobic Gram-positive bacterium representing a primary health problem in the swine industry. Ceftriaxone is a therapeutic option for meningitis besides ampicillin. The incidence of resistance to ceftriaxone was recently reported. This patient's relapse of S. suis cases is thought to cause ceftriaxone resistance.
Case Presentation: A 43-year-old male patient came to the ER with complaining of headaches over the head and neck. The patient has a history of meningitis due to S. suis twice before with ceftriaxone therapy and post-mechanical valve replacement (2005). The patient underwent a laboratory examination with the results INR 2.18 (very high-critical value), so a lumbar puncture cannot be performed. Blood culture was performed, and the patient was given ceftriaxone while waiting for the culture results. The result of 2-sided blood culture showed S. suis infection using VITEK 2 COMPACT (Biomeriuex®) whereas ceftriaxone resistance. Ampicillin was given after this blood culture result came for four weeks, and the outcome was good.
Discussion: The mechanisms of *S. suis* resistance to antibiotics vary, including the production of target-altering and antibiotic-inactivating enzymes, mutations in antibiotic targets, and trends due to repeated and long-term use of ceftriaxone.
Conclusions: The use of antibiotics in relaps and recurrent cases has the potential to cause antibiotic resistance, so it is necessary to make guidelines for antibiotic therapy in S suis infection to prevent recurrent infections.

Keywords: *S.suis*, resistance, Ceftriaxone

P-025

Carbapenem-resistant *acinetobacter baumannii* in geriatric patient with suspect surgical site infection after chest tube removal

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Background: *Acinetobacter baumannii* is a gram-negative bacterium which prominently related with health-care associated infections. *A. baumannii* has an exceptional ability to develop resistance to multiple antibiotics. Rapid identification of this bacteria is required either to control this bacterial infection and also the spreading.
Case presentation: A-60-year-old female with a history of right breast carcinoma presented with shortness of breath for 2 weeks before the admission. The symptoms worsened a day before hospitalization. No history of fever. Patients has leucocytosis and pleural effusion was observed from X-ray. Two days after chest tube removal, the wound become inflamed. Microscopic evaluation of wound swab found a gram-negative coccobacilli. Further evaluation use sequence method was confirmed with *Acinetobacter baumanni*. Patient improved after ceftriaxone was changed with cefixime and metronidazole.
Discussion: The outcome of this patient management was in line with a previous study, which reported a novel combination therapy for extensively drug-resistant *Acinetobacter baumannii* must be considered. Since cefiderocol is not available in our hospital, the patient treated with another antibiotics and improved. It should be noted that the standard hospital treatment formulary is not yet available, it turns out that our combination therapy can be considered as an alternative treatment for this notorious bacteria.
Conclusion: In case of *Acinetobacter baumanii* infections, a comprehensive approach using phenotype and genotype approach are crucial for identification of this bacterial resistance profiles, hence helping the treatment.

Keywords: *Carbapenem-resistant, Acinetobacter baumanni, Combination therapy*

P-032

Rare case report: *Pandoraea spp* causing bacteremia associated with CRBSI in patients with hydrocephalus post intraventricular haemorrage drain revision in Prof Dr I.G.N.G Ngoerah General Hospital

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Background: *Pandoraea* species is a multidrug-resistant, gram-negative bacillus usually isolated from patients with cystic fibrosis (CF) and also commonly found water and soil. *Pandoraea spp* in non-CF patients blood stream infection is rare. We report the first case of post-revision VP shunt hydrocephalus with bacteremia and associated CRBSI caused by *Pandoraea spp*.
Case Presentation: A 50 year old man, Balinese, with underlying disease with sepsis by *Pandoraea spp* after several history of surgery, patient with non-communicating Hydrocephalus *et causa* intraventricular haemorrage post endoscopic IVH Evacuation and revision of the proximal shunt. The patient complained of unconscious since 2 days, slurred speech, weakness half of the body, vomited one time, seizures and fever was denied. CVC device installed 20 days and had fluctuating fever during the hospitalization. Cefoperazone sulbactam, Metronidazole were given intravenously for empiric treatment. *Pandoraea spp* were isolated from both his blood samples and exit site, once the pathogen and drug sensitivity were confirmed, Levofloxacin was planned for definitive treatment. One month after the patient was admitted, the patient's condition worsened and pronounced dead.
Discussion: *Pandoraea* spp had been reported from this patient with multiple organ dysfunction as complicating factor.The potential source of this bacteria in our case was considered as contamination from the environment. This infection considered as CRBSI during hospitalization. This bacteria is multi-drug resistant, which makes treatment of Pandoraea infections complicated.
Conclusion: The finding case will be beneficial to clinicians because it provides additional information about the lesser known Pandoraea species.

Keywords: *Pandoraea spp*, crbsi, case report, multidrug resistant

P-033

Evaluation of air contamination in the clinical microbiology laboratories of Dr. Soetomo Regional General Hospital Surabaya

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Background: Air is an important part of human life. However, air can be contaminated with airborne microorganisms. Temperature, relative humidity and the number of visitors in the room have an impact on the quantity of airborne microbes.
Objectives: To find out the correlation between the number of airborne microbes with temperature, relative humidity and the number of personnel.
Methods: This study used the settle plate method with a Blood agar petri dish with 1/1/1 scheme. The measurements were conducted 3 times (7am, 12pm and 4pm). The room temperature, relative humidity and the number of personnel in the room were also measured. After being incubated 1x24 hours at 37^{0}C, the number of colonies in each petri dish was calculated and converted using the *Omeliansky* formula to calculate the number of airborne bacteria (CFU/m^3). The data were processed with SPSS.
Results: In 4 Clinical Microbiology rooms (Urine Laboratory, Blood Laboratory, Pus Laboratory and Sputum Laboratory) the average number of airborne microbes was 425.7CFU/m^3, the highest number in the Blood Laboratory at 4pm (988 CFU/m^3) and the smallest number of airborne microbes in the Urine Laboratory at 7pm(65 CFU/m^3). The correlation test shows a correlation between the number of airborne microbes and the number of personnel(p=0.012). There was no correlation between the number of airborne microbes and temperature(p=0.92) and relative humidity(p=0.28).
Conclusions: There is a correlation between the number of airborne microbes and the number of personnel, meanwhile there is no correlation between the number of airborne microbes and temperature and relative humidity.

Keywords: Airborne microbes, Temperature, Relative humidity, number of personnel

P-041

A Case of Candida glabrata in urosepsis patient

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Background: Urosepsis is sepsis caused by infections of the urinary tract including lower, upper urinary tract and kidney infections. Urosepsis can present with a varying spectrum of signs and symptomps, as infection in different parts of the urogenital tract may present differently.
Case Presentation: A 60-year old woman with decreased consciousness, restlessness and weakness was consulted to the microbiology department for urine culture examination. Patient was experienced low urine output and not accompanied with pain during urination. Prior to loss of consciousness the patient complained of fever and shortness of breath but was not accompanied by a cough. Five months earlier the patient had swelling in the right calf. Candida glabrata were isolated from culture and the same results were shown by PCR examination.
Discussion: Amphotericin B, Fluconazole, Flucystosine are effective treatment for candiduria but caution should be exercised in those with impaired renal function. As soon as the culture results came out, the patient received Micafungin therapy 100 mg/24 hours/iv and 2 days after therapy the patient's consciousness improved.
Conclusions: The present case shows that micafungin can achieve clinically relevant fungal sterilization and can apply against *Candida glabrata* urinary infections

Keywords: *Candida glabrata*, treatment, urosepsis

P-049

Combination antibiotic susceptibility testing in clinical microbiology laboratories: the need of a feasible procedure for prudent combinations in the age of antibiotic resistance

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Background: Combination antibiotic therapy is a promising strategy for managing infections caused by multidrug-resistant microorganisms. The expected synergy effect is influenced not only by the type of antibiotic but also by the drug-pathogen interaction as well as the infection and patient characteristics, highlighting the importance of tests to determine the most suitable combination. The standard testing protocols are mainly used for research purposes due to the complexity of the assays. A test that can be utilized routinely in laboratories is required.
Objectives: To review existing combination antibiotic susceptibility testing methods along with relevant issues pertaining to the advantages and drawbacks of each method.
Methods: A literature review was conducted with search terms through the PubMed database. A total of 22 articles were included.
Results: In vitro and in vivo susceptibility tests for combinations of antibiotics are available. In vitro tests can be classified as dilution-based (checkerboard and time-kill assay) or diffusion-based (disk-diffusion and E-test). There are numerous published variations and modifications of both assays. Disks, filter paper strips, or commercial antibiotic strips of E test can be used in diffusion-based procedures, which are more straightforward and easier to perform. Disk approximation and disk stacking tests can be performed in the laboratory without requiring significant additional resources.
Conclusions: Diffusion-based combination antibiotic susceptibility tests can be employed routinely alongside another daily assay in the clinical microbiology laboratory workflow. Further studies are needed to determine the comparability between the method and standard time-kill assay protocols.

Keywords: combination antibiotic susceptibility test, antibiotic synergy test

P-052

Antibiogram profile of methicillin-resistant staphylococcus aureus (MRSA) against Cotrimoxazole, Clindamycin, and Erythromycin from Clinical Isolates in Saiful Anwar General Hospital Malang

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Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) is a significant cause of healthcare-associated infections. Decolonization therapy aims to reduce MRSA transmission and prevent infections in high-risk patients. Understanding MRSA's susceptibility to antibiotics is crucial for effective therapy.
Objectives: This study assessed antimicrobial resistance in clinical isolates, specifically on cotrimoxazole, clindamycin, and erythromycin.
Methods: Retrospectively, we collected clinical isolate data from Saiful Anwar General Hospital Malang, Indonesia, between January 2018 and December 2022. MRSA isolates were identified using Vitek-2 system and underwent antimicrobial sensitivity testing (AST).
Results: Among all clinical isolates, we found 590 MRSA isolates. Resistance to clindamycin was highest in 2021 (41%) and lowest in 2022 (24%). Erythromycin resistance varied between 29% in 2020 and 41% in 2021. In 2018, 48% of MRSA isolates exhibited resistance to cotrimoxazole, the highest resistance observed over the four-year period. The lowest cotrimoxazole resistance was in 2020 (30%). These findings demonstrate the presence of MRSA isolates with varying resistance levels to cotrimoxazole, clindamycin, and erythromycin. Eradication regimens are crucial for preventing prolonged infection and morbidity in MRSA cases. Combination therapy should be considered when AST indicates resistance to these drugs. The antibiogram profile can be updated accordingly.
Conclusions: In our study, MRSA isolates showed resistance to cotrimoxazole, clindamycin, and erythromycin in Saiful Anwar General Hospital Malang between January 2018 and December 2022. More than 20% of isolates were resistant to clindamycin and erythromycin, while resistance to cotrimoxazole exceeded or equaled 30%.

Keywords: Methicillin-Resistant *Staphylococcus aureus*, antimicrobial resistance, cotrimoxazole, clindamycin, erythromycin.

P-055

Methicillin-Resistant Coagulase-Negative Staphylococci in Breastfeeding Mothers and Their Babies

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Background: Coagulase-negative staphylococci (CoNS) represents a classic opportunistic pathogen established as a common cause of various healthcare. Antimicrobial resistance (AMR) is widespread among human commensal CoNS, many detected as methicillin-resistant isolates.
Objectives: This study aims to determine the incidence of methicillin-resistant coagulase-negative Staphylococci (MrCoNS) in breastfeeding mothers and their babies.
Methods: CoNS identification and sensitivity test using the VITEK®2 System. We are screening breastfeeding mothers and their babies from June to August 2022 in the working area of the South Tangerang City Health Service.
Results: We found CoNS species including S.epidermidis (40%), S.haemolyticus (30%), S.hominis ssp hominis (6%), S.ludgunensis (6%), S.warneri (4%), S.lentus (4%), S.capitis (2%), S.gallinarum (2%), S.auricularis (2%), and S.saprophyticus (2%). A total of 29 (62%) isolates were MrCoNS. Over 50% of isolates were resistant to benzylpenicillin, clindamycin, erythromycin, and oxacillin.
Conclusions: The prevalence of MRCoNS nasal carriers is high in lactating mothers and infants on a community basis. Monitoring and control of methicillin-resistant strains are necessary.

Keywords: breastfeeding mothers, infants, methicillin-resistant coagulase-negative Staphylococci.

P-058

Definitive antibiotics and vacuum assisted closure in community acquired methicillin resistant staphylococcus aureus skin and soft tissue infections

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Background: Skin and soft-tissue infections (SSTIs) are the most frequent forms of the Community Acquired Methicillin Resistant *Staphylococcus aureu*s (CA-MRSA). One of the distinctions between CA-MRSA and the health care-associated MRSA is the susceptibility patterns to non-beta-lactam antibiotics.
Case Presentation: A 42-years old woman presented into the emergency room of Dr. Soetomo Hospital with left leg wound because of traffic accident since a month ago. There is history of recurrent skin lesion in lower extremities. The wound is expanding, seeping and painful, there is no fever. Physical examination revealed a wound in the regio cruris 12x1 cm with necrotic surface of the subcutis base. WBC, CRP, and procalcitonin were increased. Culture of pus and wound tissue showed MRSA. The patient was diagnosed with Cellulitis Cruris e.c MRSA. Debridement was conducted followed by Vacuum Assisted Closure (VAC) of the wound. Previously, patient was given with Ceftriaxon then switch with Clindamycin. There was clinical improvement in lesion and reduced pain.
Discussion: MRSA isolates obtained in tissue specimens and pus are phenotypically identical, namely sensitive to Clindamycin, Erythromycin, Rifampin, Linezolid, Teicoplanin, Vancomycin, and Chloramphenicol. Then, patient was given antibiotic according to culture. Besides, patient was performed VAC that has potential treatment of MRSA wound infection. Together with definitive antibiotics, VAC promotes rapid wound healing by reducing biological burden.
Conclusions: Obtainment of culture specimens is important for detection of the presence of MRSA and for susceptibility testing to guide therapy. Appropriate management of CA-MRSA SSTIs includes wound management and appropriate antibiotics.

Keywords: Methicillin Resistant *Staphylococcus aureu*s, Vacuum Assisted Closure

P-059

Persistence of Carbapenem-Resistant Pseudomonas aeruginosa in Saiful Anwar General Hospital, a five years study

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Background: *Pseudomonas aeruginosa* is known to form resistance to the exposure of antimicrobial agents, including carbapenem. This resistance possesses a challenge in treatment due to its higher chance of morbidity and mortality.
Objectives: This study aimed to explore and describe the presence of carbapenem-resistant (CR) *P.aeruginosa* in our hospital in the last five years (Jan 2018 to Dec 2022).
Methods: Data was collected and sorted from WHONET5 in Laboratory of Microbiology, Saiful Anwar General Hospital, Malang, Indonesia. Only records from inpatient wards with complete results of antimicrobial sensitivity tests were included. The data were subjected to statistical analysis to assess possible significant changes in the number of CR isolates between years.
Results: We found 734 CR isolates (33.65% of total *P.aeruginosa* isolates) in five years. This is quite a concerning fact, given that meropenem is one of the final lines of treatment for patients with infectious disease. The highest number of CR isolates was found in 2020 (199 of 436 isolates were resistant to meropenem). However, there is no significant difference in the number of isolates found when we analyzed the five years as a whole. There is always at least 27% of CR isolates among all *P.aeruginosa* isolates each year.
Conclusions: The resistant isolate has been around in the last five years, probably longer than that, though the exact number was never reported before. It may as well present in other end-referral hospitals which accepted patients with a history of antimicrobial treatments. This conclusion suggests continuous surveillance to monitor the presence of CR isolates.

Keywords: *Pseudomonas aeruginosa*, carbapenem resistance

P-066

Six Years (2017-2022) microbiological profile of fungal infection in Dr. Kariadi Hospital Semarang

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Objectives: To describe the microbiological profile of the fungal culture examination carried out at Dr. Kariadi Hospital during the last 6 years of observation (2017 to 2022).
Methods: Retrospective observation of the medical records of patients who underwent fungal culture. A total of 1334 fungal culture examinations were carried out from inpatients, outpatients and emergency departments during 6 years of observation.
Results : Examination of fungal culture has increased from 2017 to 2022 (n = 128, 156, 175, 197, 298, 380, respectively). Patients came from various types of services such as non-intensive inpatient (53%), outpatient (25%), intensive inpatient (15%) and emergency department (7%), with a mean±SD patient age of 47±18 years old. The largest types of samples for fungal culture were from corneal scraping (24%), vitreous fluid (17%), bronchial wash (17%), intraoperative tissue (11%) and skin scrapings (9%), for the five most common types of samples. This corresponds to the 4 (four) most common areas of disease, namely the ophthalmology, pulmonary, dermatovereology and ear-nose-throat fields. Only 29% (n=390) of fungal culture examinations showed fungal growth with the 5 largest fungal genera were *Candida* (49%), *Aspergillus* (20%), Mold (7%), *Trichophyton* (6%) and *Fusarium* (5%). The fungal identification rate up to the species level was 37% (n=143).
Conclusions: There was an increase in the diagnosis of fungal infections that occured in Dr. Kariadi Hospital must be followed by increasing the capacity of the clinical microbiology laboratory to identify fungi up to the species level.

Keywords: fungal infection, microbiology, mycology

P-067

Molecular Assays As Initial Test For Detecting Of Tuberculosis At Sumbawa Hospital

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Objectives: Tuberculosis (TB) is a leading cause of morbidity and mortality worldwide. Xpert MTB/RIF, new test using automation nucleic acid amplification to detect *Mycobacterium tuberculosis*, as well as mutations that produce rifampicin resistance, we aimed Xpert MTB/RIF in today's TB diagnostic to surveillance and surveys tuberculosis cases in Sumbawa hospital.
Methods: This was a descriptive study using the database of the Mycobacteriology Laboratory of the Sumbawa Hospital. We evaluated 449 sputum samples collected from symptomatic respiratory patients, under routine conditions, from January to December 2022. All of samples were submitted to Xpert MTB/RIF test and patients were stratified by gender. A positive result on the Xpert MTB/RIF test is available on its platform in four levels of semiquantitative detection: very low, low, medium, and high.
Results : During the study period January to December 2022, 449 sputum samples evaluated, The Xpert MTB/RIF test in 284 (63.3%) male patients and 165 (36.7%) female patients. The Xpert MTB/RIF test detected MTB detected low 48 (10.7%), MTB detected medium 35 (7.8%), MTB detected high 15 (3.3%) and rifampicin resistance detected 3 (0.7%). In male patients was MTB detected 64 (22.5%) and female patients 37 (22.4%).
Conclusions: Detecting more cases, detecting them early and rapidly identifying drug resistance are essential for improving individual patient health and avoiding transmission in the community. This requires further study and early detection using expert tools and innovative strategies.

Keywords: sputum, tuberculosis, rapid molecular test

P-068

Bacterial meningitis caused by Salmonella Sp. in children: a case report

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Background: Meningitis is an inflammation of the meninges caused by bacteria, viruses, or fungi and is a life-threatening infection, especially at a critical age, such as in children, with a case fatality rate of up to 50% in 2021. In Indonesia, meningitis in children ranks 9th out of the ten most common diseases, around 158 out of 100,000 cases/year, and could cause 30-50% sequelae. We report compelling bacterial meningitis in children caused by *Salmonella spp.*
Case Presentation: The case of a 7-month-old baby boy admitted to the pediatric ward with a history of persistent high fever, decreased consciousness, and seizures with meningeal signs (+). Blood and Cerebrospinal Fluid (CSF) were collected and the culture results showed *Salmonella sp*. using *VITEK 2 Compact* and sensitive to cephalosporin antibiotics. Treatment was carried out with Ceftriaxone 100mg/kgBW/day, and the patient was allowed to discharge hospital with a cured condition after undergoing treatment for one month.
Discussion: Meningitis due to *Salmonella* infection in children is very rare. *Salmonella sp* can be transmitted through food or equipment used by children contaminated with this bacteria. Third-generation cephalosporins can be given as the therapy against this infection Because of their excellent bioavailability at the blood-brain barrier, with a minimum duration of 3-4 weeks to prevent recurrence.
Conclusions: Meningitis cases in pediatric patients are associated with high morbidity and mortality. Prompt and appropriate antibiotic therapy provides a good prognosis in patients.

Keywords: Children, Meningitis bacterial, Salmonella spp.

P-069

Profile of procalcitonin in patient with bacteremia in ICU Saiful Anwar Hospital

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Background: The isolation of microorganisms is the gold standard for diagnose, while procalcitonin (PCT) is a relevant biomarker for infection screening and determining the prognosis of bacterial infections. Recent studies showed the potential role of PCT to discriminate sepsis caused by Gram-negative (GN) and Gram-positive (GP) bacteria or fungi.
Objectives: The purpose of this study was to determine the procalcitonin profile of various infections, especially bacteremia.
Methods: The methods used in this study is retrospective observational study by collecting medical records of patients in ICU suspected of infection by sending procalcitonin and cultures over a 6-month period from September 2022 – February 2023.
Results: The result showed that the median PCT values for Gram-negative bacteremia, Gram-positive bacteremia, fungemia were 2.70 ng/mL, 2.76 ng/mL, and 1.25 ng/mL respectively. Based on the severity of sepsis, the highest median PCT (> 100,00 ng/mL) was found in septic shock in the Gram-negative bacteremia group.
Conclusions: The conclusion in this study is that procalcitonin values showed relatively similar results for all infections.

Keywords: Procalcitonin, systemic infection, culture result

P-070

A Case Report of Endophthalmitis caused by streptococcus pneumoniae serotype 3

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Background: *Streptococcus pneumoniae* is often the cause of infections, including eye infections such as endophthalmitis, keratitis, and conjunctivitis. Endophthalmitis is a severe infection and can cause blindness. This case report aims to investigate and report the incidence of eye infection caused by *S. pneumoniae*

Case Presentation: We report the case of a 67-year-old man with blurred vision in his right eye accompanied by red, watery eyes, discharge, swollen eyelids. The patient was assessed as having exogenous panophtalmitis ocular dextra et causa bacterial infection with post-secondary implant for three years. From the result of culture and sensitivity test of the cornea and vitreous sample, *S. pneumoniae* was found with 97% probability using VITEK 2 Compact. We continued to examine the serotype using PCR and the obtained result of S. *pneumoniae* serotype 3. The patient was treated with Ceftriaxone as definitive therapy, and the condition improved.

Discussion: *S. pneumoniae is a causative agent in eye infections and sight-threatening conditions*. *S. pneumoniae* Serotype 3 is most frequently detected and most problematic as it is responsible for causing a variety of severe clinical manifestations, including empyema, bacteremia-induced septic shock, pneumonia, and meningitis with fatality rate of 30%-47%. However, it is infrequent to cause ocular infections. A patient's history of eye surgery can be a potential risk factor for developing S. pneumoniae infection.

Conclusions: *S. pneumoniae* is the known organism that causes one eye infection with risk factors such as previous cataract surgery. Prompt diagnosis and treatment are needed for good outcomes.

Keywords: Endophthalmitis, *Streptococcus pneumoniae*, serotype 3

P-071

A 29 Years Old Woman with erythroderma caused by mrsa infection at Dr. Kariadi Hospital: a case report

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Background: Colonization of *Staphylococcus aureus* (SA) in the skin can cause erythroderma.
Case Presentation: A female patient, 29 years old, came with complaints of skin peeling all over the body in the past three days and weakness. The patient experienced the same complaint on December 30, 2022, and January 20, 2023. Anaemia, leucocytosis, eosinophilia, and Sezary Cells (SC) of 5/100 leukocytes were found on blood examination. ANA Profile test results show increased Antibodies Ro, PM/Scl, and PCNA. On microbiological examination, *SA Methicillin Resistant* (MRSA) infection was obtained from 2-site blood culture. During treatment, the patient had septic shock and complained of hair loss. The patient was treated with intravenous Vancomycin. The patient's condition improved, skin peel has reduced, leukocytes decreased, and the patient was allowed to be an outpatient. The patient was re-hospitalized in March 2023 with complaints of seizures and erythroderma still visible. Leukocytes increased again. During this period of hospitalization, the patient's condition worsened, and the patient died.
Discussion: One of the causes of erythroderma is cutaneous T-cell lymphoma (CTCL). SA superantigen can induce CTCL. Sezary cells found in the peripheral blood smear are a hallmark of CTCL. Sezary syndrome (SS) and mycosis fungoides (MF) are the two main clinical manifestations of CTCL
Conclusions Patients with erythroderma suspected CTCL caused by MRSA, which also infects the patient's blood, causing septic shock. The presence of SLE exacerbates the patient's condition.

Keywords: Erythroderma, *Staphylococcus aureus*, *MRSA*, Superantigen, Sezary Cell, Cutaneous T-Cell Lymphoma

P-072

ESBL-Producing *Klebsiella pneumoniae* profile in neonatal Intensive Care Unit of Dr. Saiful Anwar Hospital, Malang from April 2022 until May 2022

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Background: Data of ESBL-producing *Klebsiella pneumoniae* in Indonesian neonatal intensive care unit (NICU) is rarely described. Hance we performed short term evaluation of ESBL-producing bacteria prevalence in the NICU of dr. Saiful Anwar hospital.
Objectives: This study aimed to investigate the prevalence of ESBL-producing *Klebsiella pneumoniae* prevalence in the NICU of dr. Saiful Anwar hospital during two months period.
Methods: We collect positive-culture result data of ESBL-producing *Klebsiella pneumoniae* from NICU patients' medical records from April 2022 until May 2022. The data was presented in percentage.
Results: During April 2022, there are 8 specimens with positive result among 37 tested specimens (21.6%). During May 2022 there are 6 specimens with positive result among 43 tested specimens (14.0%).
Conclusions: The prevalence of ESBL-producing *Klebsiella pneumoniae* is lower in May 2022 compared to April 2022. Further studies are needed to investigate the prevalence of ESBL-producing *Klebsiella pneumoniae* in longer period.

Keywords: NICU, ESBL-producing *Klebsiella pneumoniae*, 2022

P-074

Case report: rare case of human *Streptococcus suis* Vasculitis at Prof. Ngoerah Hospital, Denpasar, Bali

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Background: *Streptococcus suis (S. suis*) is a zoonotic pathogen that causes disease such as dysfunction of multiple organs (disseminated intravascular coagulation and acute renal failure), meningitis, endocarditis, endophthalmitis, arthritis, and toxic shock in pigs and humans. Risk of infection will increase among people who had close contact with pigs or pork products, and who consume undercooked pork meat.
Case Presentation: Here we present a report of infection caused by *Streptococcus suis*. A 73-years-old Balinese man was admitted to the Hospital with loss of consciousness, shortness of breath, and a blue discoloration of the skin was observed. Blue discoloration symptom start one week before the admission. There was no history of recent exposure to pigs, other animals or even occasional exposure, but a history of eating pork meat was confirmed approximately 6 months ago. Leukocyte 21.79 x 103/µL, neutrophil 92.80%, procalcitonin 83.14 ng/mL. Microbial lab result was *S. suis* (blood sample, 99% probability) was sensitive to ampicillin, cefotaxime, ceftriaxone, levofloxacin, erythromycin, chloramphenicol. Ceftriaxone was planned for definitive treatment. After the antibiotics was administrated, the Procalcitonin level was reduce to 6.93 ng/mL but 7 days after the patient's admission, the patient's condition deteriorated and then was declared dead.
Discussion: Vasculitis (blue discoloration of the skin) which was observed in this patient is the of clinical syndrome caused by *S. suis* infection, which commonly lead to a septic condition. Cephalosporin and penicillin remain the drug of choice for treating this illness. The factor that most likely contributed to patient death was the patient's delay admitted to the Hospital. In previous study, the antibiotic therapy start at least 2 days after symptom was appear.
Conclusions: This case emphasized the need for awareness and recognition of *S. suis* as a zoonotic pathogen.

Keywords: Antibiotic Therapy, *Streptococcus suis*, Vasculitis

P-076

An overview of bacterial profile of a catheter-associated urinary tract infection (cauti) patient at the Intensive Care Unit of Saiful Anwar Hospital in Malang, Indonesia

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Background: Catheter-associated urinary tract infections (CAUTIs) are among the most common nosocomial infections with different clinical and microbiological characteristics. Widespread and rapidly emerging multidrug-resistant uropathogens are a public health concern that impairs the determination of empirical therapy.
Objectives: This study aims to discover the bacterial profile of catheterized patients obtained during this year from ICU patients at General Hospital Dr.Saiful Anwar Malang
Methods: This study is a descriptive retrospective study using urine catheter specimens sent to the Microbiology Department of Dr.Saiful Anwar Hospital from January to April 2023. Bacteria from culture were identified and susceptibility tests were performed using a VITEC 2 system standard and CLSI.
Results: The number of positive samples isolated in this study was 149 from total samples 392 and positivity rate was 38,01%. The microbiological identification showed that the most isolated microorganisms were Multidrug-resistant (MDR) 63,75 % and non MDR bacteria (26,25%). Gram negative Pathogens were more common than Gram positive Pathogens in CAUTI. There were 60,4% Gram negative (90 isolate) and 22,8% Gram Positive (34 isolate). Gram negative Pathogens that are isolated include *Acinetobacter baumannii* (22,81%), *Escherichia coli* (22,14%), %), *Enterococcus faecalis* (10,73%) dan *Klebsiella pneumoniae* (9,39%).
Conclusions: Antimicrobial-resistant pathogens pose a real challenge in ICU clinical practice in CAUTI. Gram negative bacili were major pathogen and *Acinetobacter baumannii* is the most common bacteria isolated from specimens of CAUTI in January –April 2023.

Keywords: Bacterial uropathogens, CAUTI, Intensive Care Unit

P-078

Qualitative analysis of antibiotic use among Covid-19 patients in an Intensive Care Unit of a Tertiary Care Hospital In Indonesia (Interim Report)

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Objectives: To analyze the quality of antibiotic prescribing among COVID-19 patients in the intensive care unit (ICU) of Dr. Saiful Anwar Hospital, Malang, Indonesia.
Methods: The quality of antibiotic use among eight COVID-19 patients hospitalized in the ICU was analyzed. Data were collected by retrospective review of medical records and analyzed using the Gyssens method. Following the Gyssens method, antibiotic prescriptions were classified as appropriate or inappropriate. For this interim report, the quality of 15 used antibiotics was evaluated.
Results: The antibiotic use was categorized as empirical (13/15, 87%) and definitive (2/15, 13%). Three antibiotics (20%) derived from two medical records were not further analyzed because of insufficient data. 20% of prescriptions were considered appropriate; 60% were inappropriate regarding indication and duration.
Conclusions: The interim report showed a low level of appropriate use of antibiotics among eight COVID-19 patients hospitalized in the ICU of a tertiary care hospital in Indonesia. Further study with a larger number of patients should be done to draw conclusions from this study.

Keywords: antibiotics, COVID-19, Gyssens

P-085

Pattern of world health organization priority multidrug-resistant pathogens in Klungkung General Hospital

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Background: Emerging Multidrug-resistant (MDR) bacterial infections are a serious threat because of high morbidity and mortality as a result of the limited choice of antibiotic therapy.
Objectives: The aim of this study was to determine the prevalence of World Health Organization (WHO) priority MDR pathogens and their antibiograms in Klungkung hospital from all patient clinical specimens.
Methods: This descriptive cross-sectional study used all clinical specimen isolates that identification and their sensitivity to antibiotics test with the automatic method using Vitex-2 Compact (bioMerieux®) and semi-automated using MicroScan autoSCAN-4 System (Beckman Coulter®) from January 1st to December 31st, 2022.
Results: MDR pathogens were isolated from 224 positive cultures such as 75.5% (37/49) of extended-spectrum beta-lactamases (ESBL)-producing Escherichia coli, 59.3% (16/27) ESBL-producing Klebsiella pneumoniae, 47% (15/32) Carbapenem-resistant Acinetobacter baumannii (CR-AB), 25% (6/24) Carbapenem-resistant Pseudomonas aeruginosa (CR-PA) and 21% (5/24) Methicillin-resistant Staphylococcus aureus (MRSA). ESBL-producing bacteria were still sensitive to meropenem and amikacin, while MRSA were still sensitive to clindamycin, linezolid and amikacin. No antibiotics were sensitive to CR-AB and CR-PA isolates.
Conclusions: A comprehensive, multipronged policy response and integrate microbiological diagnostics, infection prevention control and antimicrobial stewardship are urgently needed in efforts to reduce the prevalence of WHO priority MDR pathogens.

Keywords: multidrug-resistant, WHO priority pathogens, clinical specimens

P-086

The role of bacterial secondary infection in the severity of Covid-19 pneumonia

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Background: Covid-19 mortality rate is high, the severity due to respiratory failure as pneumonia with lung alveoli damage, the presence of comorbidities and secondary bacterial infections. Indonesia's national guidelines for Covid -19 treatment recommend the use of antibiotics in patients who are seriously and critically ill, especially with suspicion of bacterial infection. Seventy five percent Covid -19 patients receive antibiotics although only 8% develop secondary bacterial infection.
Objectives: The aim to determine the severity of Covid -19 pneumonia and the role of secondary bacterial infections in Covid -19 pneumonia patients.
Methods: Cross sectional study with medical records data and laboratory results of 52 hospitalized Covid-19 patient at PKU Muhammadiyah Gamping. The role of bacterial secondary infection and the severity of Covid -19 pneumonia was analysis using Chi square test.
Results: Male patients are 59.6% with 61.5% are aged 51-65 years old. Moderate degree of severity is 32.7%, severe is 38.5%, and critical is 28.8%. Comorbid diabetes mellitus is 34.6% and hypertension is 13.5% and without comorbid 51.9%. Secondary infection occurred in 21.1% of patients of which 81.8% of patients with critical severity. The mortality rate is 54.5% in Covid -19 patients with a secondary bacterial infection, whereas 20.5% are absence of a secondary bacterial infection.
Conclusions: Empirical antibiotic treatment is given in about 95% of all patients. Chi square analysis showed secondary bacterial infection plays a role in the severity of Covid-19 (p value ≤1). Secondary bacterial infection plays a role in the severity of Covid -19 pneumonia.

Keywords: Covid-19, Pneumonia, Severity, Secondary Bacterial Infection

P-087

The prevalence of extended Spectrum Beta-Lactamase-Producing Bacteria among clinical isolates from COVID-19 patients in a Secondary Care Hospital in Indonesia (Interim Report)

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Objectives: To determine the prevalence of Extended Spectrum Beta-Lactamase (ESBL) -producing Enterobacteriales among clinical cultures obtained from COVID-19 patients in a secondary care hospital in Blitar, Indonesia.
Methods: Clinical cultures of patients admitted to COVID-19 wards (both from the intensive care unit (ICU) and non-ICU) and regular wards (both ICU and non-ICU) in Ngudi Waluyo hospital in Blitar, Indonesia, from March 2022 to April 2023 were included in this study. ESBL-producing-*Escherichia coli* and -*Klebsiella pneumoniae* isolates were identified phenotypically using the Vitek2® system.
Results: Over one year, 699 bacterial isolates were collected from clinical cultures of 1074 patients. The prevalence of ESBL-producing -*Escherichia coli* was 24/699 (3.4 %) including 4/24 (16.7%) isolates from the COVID-19 ICU, 14/24 (58.3 %) isolates from the regular ICU and 6/24 (25 %) from the non-ICU regular wards. The prevalence of ESBL-producing *Klebsiella pneumoniae* was 31/699 (4.4 %) with 1/31 (3.2 %) isolate from the COVID-19 ICU, 8/31 (25.8 %) isolate from the COVID-19 wards, 12/31 (38.7 %) isolates from the regular ICU, and 10/31 (32.3 %) from the non-ICU regular wards.
Conclusions: The prevalence of ESBL-producing -*Escherichia coli* and -*Klebsiella pneumoniae* was higher in the regular wards than in the COVID-19 wards in Ngudi Waluyo Hospital, Blitar, Indonesia. Further studies are required to investigate the clonality of the ESBL-producing bacteria in the regular wards.

Keywords: COVID-19, ESBL, Indonesia

P-092

Distribution of SARS-CoV-2 variants in patients admitted to RSUP Prof IGNG Ngoerah

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Background: The COVID-19 pandemic declared on March 2020. Since the beginning, mutations of SARS-CoV-2 have led to emergence of variants that affect virulence, transmissibility, and ability to evade immune system which relate with the effectiveness of vaccine. WHO currently monitoring variants which are regularly assessed based on the risk posed to global public health.
Objectives: This study aims to describe the distribution of SARS-CoV-2 variants in Prof IGNG Ngoerah hospital. Subjects of this study were 34 COVID-19 patients admitted from December 2022 to April 2023.
Methods: RNA extraction was performed on naso/oropharingeal swab of COVID-19 patients with CT value under 30 prior sequencing. Amplicon-based Next Generation Sequencing with Illumina Nextseq 550 platform was performed using Covidseq assay and Arctic V4.1 primer pool. Qualitative detection of SARS-CoV-2 RNA was performed using Dragen COVID lineage app on BaseSpace Sequence Hub. Metadata of patients were collected. SARS-CoV-2 sequences and metadata were submitted to GISAID.
Results: Full sequence of SARS-CoV-2 were obtained from 21 inpatient and 11 outpatient. Variants in inpatient were XBB.1, XBB.2.1, XBB, CM.2.1, XBB.1.9.2, XBB.1.5.18, CH.3.1 sublineages of Omicron BA.2 and FC.1, EF.1, BQ.1 sublineages of BA.5. Variants in outpatient were XBB.2.1, XBB.1, XBB, XBB.1.9, XBB.1.5 of BA.2 and BQ.1.23, BQ.1.23, BQ.1.1.22, BQ.1.1.13 of BA.5. Variants in deceased cases were XBB.1, CM.2.1, XBB, XBB.2.1. Variants in March – April 2023 period were CM.2.1, XBB.1.5.18, XBB.1.9.2, XBB.2.1 and FC.1.
Conclusions: Full sequence of SARS-CoV-2 were obtained from 21 inpatient and 11 outpatient. Variants in inpatient were XBB.1, XBB.2.1, XBB, CM.2.1, XBB.1.9.2, XBB.1.5.18, CH.3.1 sublineages of Omicron BA.2 and FC.1, EF.1, BQ.1 sublineages of BA.5. Variants in outpatient were XBB.2.1, XBB.1, XBB, XBB.1.9, XBB.1.5 of BA.2 and BQ.1.23, BQ.1.23, BQ.1.1.22, BQ.1.1.13 of BA.5. Variants in deceased cases were XBB.1, CM.2.1, XBB, XBB.2.1. Variants in March – April 2023 period were CM.2.1, XBB.1.5.18, XBB.1.9.2, XBB.2.1 and FC.1.

Keywords: SARS CoV2, Variants

P-093

Fungal keratitis caused by *Cladosporium spp.* □ case report

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Background: Fungal keratitis is serious eye infection that can cause blindness. However, the report of fungal keratitis due to *Cladosporium spp.* have rarely reported. This may have misidentified because of the lack of clinical suspicion, poor specimen collection-transport and inadequate diagnostic facilities. We report the uncommon emerging fungal keratitis caused by *Cladosporium spp.*
Case Presentation: A 45 -year- old Asian female farmer visited ophthalmologist with ocular pain, foreign body sensation, and felt seeing fireflies in her left eye. She felt these complains since two months, after her left eye was hit by paddy. On examination, she had eyelid spam; her visual acuity was 3/60 OS; and on slit-lamp examination revealed corneal defect 2x2 mm. She was diagnosed as keratitis. Corneal scrapping of was done aseptically. Microscopic examination and bacterial culture revealed negative. Fungal culture was mature in seventh day in Sabouraud Dextrose Agar at 20-25 ^{0}C incubation, but not grew at 37 ^{0}C. Colony morphology was greenish brown with grayish velvety and the reverse was black. Microscopic morphology showed “shield cells” that are specific for *Cladosporium spp*. She was treated with topical Natamycin and Moxifloxacin. Ketoconazole was given at second visit. Unfortunately, patient didn’t come at third visit schedule.
Discussion: Specimen collection and handling is crutial part of fungal culture in spite of culture technique. Repeated corneal scrap of keratitis patient is reliable but invasive. Bedside sampling and inoculation are one of success key of fungal culture. Communication of critical value of fungal growth from corneal scrap to ophthalmologist are urged for patient getting earlier anti-fungal.
Conclusions: Fungal keratitis diagnosis is a challenge, especially in rare emerging fungal pathogen. Clinical information, aseptic-gentle bedside specimen collection and inoculation is needed for susccessfull positive fungal culture.

Keywords: Fungal Keratitis, Cladosporium spp.

P-099

Validation of diagnostic microbiology based on gram stain and culture with chest radiography in critically Ill patient

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Background: Validation of culture results based on direct gram stain plays an important role to differentiate pathogens cause of infection or colonization in pneumonia case.
Objectives: The aim of our study to evaluate validation of diagnostic microbiology based on Gram Stain and Culture with chest radiography in critically ill patient with suspected pneumonia.
Methods: This was a single-center retrospective data analysis of the Intensive Care Unit at Secondary Care Hospital in Central Java. Quality of Sputum was determined on Gram Stained Smears by Using a Modification Criteria of Bartlett and Semi Quantitative Score. Results of sputum culture with neutrophils count > 10 and bacterial count > 2 per field in Gram stain were considered presumptive pathogen.
Results: A total of 70 sputum specimen were collected during the study period, 12 specimens were excluded, only 58 sputum specimen were selected for this study. The number of bacteria based on the semi-quantitative score showed that 17.9% in the negative infiltrate group had a score of 0. No one of the specimens in the positive infiltrate group had a score of 0. %. This study found that the most common isolates result of sputum culture obtained were Klebsiella pneumoniae 32,76%. Diagnostics accuracy of validation results of clinical microbiologist with chest X-Ray had sensitivity 90%; specificity 60,71 %; accuracy 65,5%; positive predictive value 61,36%; negative predictive value 78,6%.
Conclusions: Validation of diagnostic microbiology based on gram stain and culture had highly sensitive and enough specific to differentiate presumptive pathogens or colonization in pneumonia case.

Keywords: Diagnostic Microbiology, presumptive pathogen, Pneumonia

P-102

Quantitative analysis of antibiotics use among Covid-19 patients in an Intensive Care Unit Of A Tertiary Care Hospital In Indonesia (Interim Report)

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Objectives: To evaluate the quantity of antibiotic use among COVID-19 patients in the intensive care unit (ICU) of dr. Saiful Anwar General Hospital, East Java Province, Indonesia.
Methods: The magnitude of antibiotic use of eight COVID-19 patients hospitalized in the ICU was analyzed. Data were collected by retrospective review of medical records and analyzed using the ATC/DDD method created by the World Health Organization.
Results: Ampicillin-sulbactam, azithromycin, cefoperazone, cefoperazone-sulbactam, cloxacillin, levofloxacin, meropenem, and moxifloxacin were used in the ICU. All indications of antibiotic use were therapeutic. The DDD analysis revealed that the total level of antibiotic use was 72.31 DDD/100 patient days. Ampicillin-sulbactam was mostly used in eight COVID-19 patients in the ICU, 25.56 DDD/100 patient days, followed by Cloxacillin, 13.33 DDD/100 patient days, and Moxifloxacin, 11.11 DDD/100 patient days.
Conclusions: The interim report showed the highest use of ampicillin-sulbactam among eight COVID-19 patients in the ICU of a tertiary care hospital in Indonesia. Further analysis should be performed to draw conclusions from this study.

Keywords: antibiotics use, COVID-19, defined daily dose

P-107

A five-year retrospective study of esbl-producing *escherichia coli*: prevalence and antibiotic susceptibility pattern

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Background: *Escherichia coli* is a Gram-negative bacillus that is part of the normal intestinal flora but can also cause infection in humans, ranging from mild gastroenteritis to kidney failure and septic shock. *E. coli* can evade the host immune system and develop resistance to antibiotics. Multidrug-resistant (MDR) *E. coli* is becoming a serious threat to public health worldwide due to the inappropriate use of antibiotics, especially third-generation cephalosporins. *E. coli* is intrinsically sensitive to almost all clinically relevant antimicrobial agents. However, this bacteria can accumulate encoding resistance genes mainly acquired by horizontal gene transfer. The most common resistance mechanism found in *E. coli* is extended-spectrum β-lactamases (ESBL).
Objectives: to determine the prevalence and susceptibility of antibiotics to *E. coli*, particularly ESBL-producing.
Methods: This cross-sectional retrospective study uses secondary data from clinical specimens examined at the Clinical Microbiology Laboratory, Faculty of Medicine, University of Indonesia (LMK FKUI) during 2017 – 2021
Results: The results of this study are expected to enrich MDR data in Indonesia. We found that 28.4% of the 800 *E. coli* isolates were ESBL-producing. In addition to a decrease in susceptibility to cephalosporin, there is a decrease in susceptibility to other antimicrobials classes, even up to <50%, including ampicillin, ampicillin-sulbactam, ciprofloxacin, trimethoprim/sulfamethoxazole, tetracycline, and tobramycin.
Conclusions: These data indicate the need to manage the use of antibiotics in order to control the spread of resistant bacteria in society, particularly ESBL-producing *E. coli*.

Keywords: *Escherichia coli*, MDR, ESBL, antibiotics resistance

P-109

Genomic identification of severe acute respiratory syndrome coronavirus 2 in asymptomatic-mild and moderate-severe patients

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Background: During the coronavirus disease 2019 (COVID-19) pandemic, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) underwent several mutations that resulted in various new phenotypes. The complexity of the clinical phenotype depends on the host, virus, and environment. It is important to evaluate these mutations to identify antigen variations that may affect the immune response to the virus
Objectives: To identify the genomic characteristics of SARS-CoV-2 and analyzing its correlation to the severity of COVID-19
Methods: This is a retrospective cross-sectional study of 74 COVID-19 patients from Cipto Mangunkusumo and Sari Asih Hospitals. The sample ribonucleic acids (RNA) were extracted and were then amplified to build a DNA library and then sequenced with next generation sequencing. The whole-genome SARS-CoV-2 is uploaded to *Nextstrain* to further determine the clade, pangolin strain, and detect the type of protein mutation.
Results: this study found two gene mutations with a significant odds ratio (OR). From the analysis, it was found that mutations in ORF1b (*OR=3.312, 95% CI [1.173, 9.351]*) and ORF3a (*OR=3.806, 95% CI [1.444, 10.034]*).
Conclusions: These findings could be used as data for further research to assess disease severity by SARS-CoV-2.

Keywords: covid-19, sars-cov-2, severity, genome, mutation

P-110

The potential of allium sativum linn as an inhibitor of *salmonella typhi* bacterial growth

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Background: Extract of garlic (*Allium sativum* L.) has been proven to have effective antibacterial effects in suppressing the growth of Salmonella Typhi bacteria. These bacteria are often found in cases of gastroenteritis and typhoid fever because they have pathogenic capabilities in humans. Garlic (*Allium sativum*) has long been known as a culinary spice and medicinal ingredient. Garlic has antibacterial activity that can control the growth of pathogenic bacteria, both Gram-negative and Gram-positive.
Objectives: To evaluate the effectiveness of garlic extract (*Allium sativum*) in inhibiting the growth of *Salmonella typhi* bacteria. Method used a true experimental post-test design using the disc diffusion method.
Methods: The disc diffusion method is used to measure the effectiveness or antibacterial activity of a substance against bacterial growth by placing paper discs soaked with the tested extract or substance on agar media that has been inoculated with bacteria.
Results: the study show that the higher the concentration of *Allium sativum*, the larger the inhibition zone formed. At the highest concentration, which is 100% garlic extract, an inhibition zone of 14.4 mm was observed with an interpretation of sensitivity

Keywords: *Allium sativum* Linn, *Salmonella typhi*, in vitro experiment

P-111

The relationship between haze and increased pneumonia at "X" Hospital in Sumatra 2015-2016 year

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Background: The frequent occurrence of fires in the regions of Sumatra and Kalimantan causes various health problems, especially respiratory diseases, one of which is pneumonia in infants. In 2019, UNICEF stated that pneumonia is one of the causes of under-five deaths every year
Objectives: The Relationship between Haze and Increased Pneumonia at "X" Hospital in 2015-2016
Methods: This research is a correlative analysis using cross-sectional method with secondary data and total sampling technique. The sample in this study were toddlers hospitalized due to pneumonia in 2015 – 2016
Result: Using data from inpatient under-fives due to pneumonia in 2015 – 2016, there were 50 children. Hospitalized patients increased in November – December after the haze disaster period. In this study, the results of statistical analysis using Spearman Correlation showed that the correlation value (Spearman Correlation = -0.206) was at a degree of weak correlation with a negative direction, and the Significance value (0.334) was greater than the specified significance value of 0.05. Therefore, the conclusion that can be drawn from this analysis is that an increase in the number of inpatients under five due to pneumonia is weakly correlated with the incidence of smog disaster. This is similar to research conducted by Kollanus in Finland in 2019 that during the haze event period, an increase in particulate pollution was not associated with hospital admissions due to respiratory problems at all ages. However, different results were found by Ming in 2018 in Kuala Lumpur that during the 2015 haze disaster period, the weekly frequency of several admissions due to respiratory problems correlated significantly, although daily admissions were found to be weakly correlated with the average per day ($r = 0.35$, $P < 0.001$)
Conclusions: There is a weak correlation between the increase in the number of inpatients under five with a diagnosis of pneumonia at the "X" Hospital in 2015 – 2016 and the incidence of the haze disaster in 2015 – 2016.

Keywords: Pneumonia, Haze, Toddlers

P-117

Comparison of Shorr Score with sputum culture MRSA positive on January–March 2023 in Dr. Saiful Anwar Hospital Malang

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Objectives: To analyze the results of Shorr Score MRSA in pneumonia patients compared with sputum sample culture.
Methods: Looking at sputum culture results in methicillin-resistant *Staphylococcus aureus* results in a retrospective manner compared with the *Shore Score* for MRSA Pneumonia was developed to assess the risk of MRSA pneumonia in admitted patients for whom the reason for admission was pneumonia.
Results: Out of 9 patients, there were (1/9, 11.11%) in the high-risk category and (8/9, 88.89%) in the intermediate-risk category.
Conclusions: Data is still descriptive and in limited numbers, but a scoring system can be used to predict MRSA outcomes.

Keywords: MRSA, Shore Score, Sputum

P-118

Orthopaedic Implant-Associated Infection: identification and biofilm producing analysis of microorganisms

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Background: Orthopaedic implant-associated infection (IAI), a serious challenge for healthcare providers in the bone fixation and joint arthroplasty managements. A strong evidence approve this infection to biofilm formation of the pathogen. Biofilm becomes a serious event as well, due to the difficulties of the management and time consuming.
Objects: This study aims to identify and determine the ability to produce biofilm of microorganisms from orthopaedic implant-associated infection patients in RSUP dr. Soeradji Tirtonegoro Klaten.
Material and Methods: Specimens from patients diagnosed with implant-associated infection between November 2022 to February 2023 was carried out. Bacterial identification was done using automated system BD Phoenix™ and VITEK 2. The biofilm producing ability was determined using microtiter plate biofilm assay with crystal violet staining.
Results: Twenty patients met the inclusion criteria. Regarding of the pathogens, we found monomicrobial as the cause of the infection in 56% (10 patients) and 44% (9 patients) were polymicrobial. From the gram staining result, 81% (22 isolates) were Gram Negative bacteria and 19% (4 isolates) were Gram Positive. *Serratia marcescens* was the most frequent pathogen. The biofilm production of the isolates were also identified and the result showed that 84,6% were considered as strong biofilm producer bacteria; and 15,4% were moderate biofilm producer.
Conclusion: *Serratia marcescens* was the most frequent bacteria caused implant-associated infection in this study. All of the pathogens in this study produces biofilm and most of them considered as strong biofilm producers. However, antibiotics susceptibility and clinical significance requires further investigations.

Keywords: Implant-Associated Infection, Biofilm, Orthopaedic, Prosthesis

P-119

Identification and biofilm forming ability of microorganisms isolated from blood specimens in sepsis patients: a study in Intensive Care Units Of Several Hospitals In Yogyakarta

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Background: Sepsis is one leading cause of mortality in the Intensive Care Unit patients in Indonesia. Microorganisms infection in the blood vessel is the most prevalent cause, and it mostly caused by Gram-negative bacteria like *Acinetobacter baumannii, Escherichia coli,* and *Pseudomonas aeruginosa.* But it can also caused by Gram-positive bacteria such as *Staphylococcus aureus, Staphylococcus haemolyticus,* and any other microorganisms like *Candida* spp. The ability of these microorganisms to form biofilm even worsening the clinical manifestation because they couldn't be easily rid by the usual dose of the antibiotics.
Objects: This study aims to identify microorganisms and determine their ability to produce biofilm from sepsis patients in Dr. Sardjito Hospital, Universitas Gadjah Mada (UGM) Academic Hospital, and Panti Rapih Hospital, Yogyakarta.
Methodology: Specimens taken from patients diagnosed with sepsis between September 2022-January 2023 in Intensive Care Unit and identified with automated system Vitek 2. The ability of the bacteria to produce biofilm was determined using microtiter plate biofilm assay with crystal violet staining.
Results: During the study period, we collected 38 isolates from blood specimens (17 from RSUP Dr. Sardjito, 14 from UGM Academic Hospital, and 7 from Panti Rapih Hospital). Gram-Negative bacteria were detected in 29 isolates, Gram-Positive in 7 isolates, and *Candida* in 2 isolates. Most microorganism causing sepsis in this study were strong biofilm producers (57,7% or 22 isolates); the weak and moderate biofilm producers were in the same number (18,4% or 7 isolates each); and 2 isolates (0,05%) didn't produce biofilm.
Conclusion: Most of the pathogens identified from blood specimens in this study were strong biofilm producers. The correlation between antimicrobial susceptibility, clinical significance and their ability to produce biofilm requires further investigation.

Keywords: Sepsis, Biofilm, Intensive Care Unit

P-120

Infective endocarditis caused by biofilm forming- streptococcus mutans in patient with dental caries: a case study

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Background: Infective endocarditis is a life-threatening inflammation of the heart valves. The highest pathogen causing infective endocarditis was *Streptococcus mutan*s, with the prevalence about 47.9% among Streptococcal blood stream infection. *S.mutans* which inhabits the oral cavity, demonstrated as strong biofilm producer. The presence of a dental caries may increase the risk of sub-acute bacterial endocarditis by *S. mutans*. Here we report a case of infective endocarditis caused by biofilm-forming *Streptococcus mutans*.
Case presentation: A 59-years-old man patient was admitted to emergency room with shortness of breath. Echocardiography showed vegetation in tricuspid valve. Blood cultures were performed from three sites of the extremities, and *S.mutans* were isolated. Based on the *Duke Modified Criteria*, this case is included in definite infective endocarditis. Furthermore, *S. mutans* was subjected for biofilm test using the microtiters plate method. The biofilm tests shown a strong biofilm-forming capability of *S. mutans.*
Discussion: The blood cultures in this case revealed the presence of *S.mutans*. *S. mutans* may forms dental plaque as, a multispecies biofilm, on hard tooth surfaces because they synthesize glucans. Glucans are used for adhesion and interact with other bacterial species to form biofilm and increase the risk of dental caries. In this case, patient has history of poor dental hygiene and often consume sweet foods, thereby increasing the risk of dental caries. *S.mutans* that enter to blood streams may attach and proliferate in abnormal valve heart to form vegetation.
Conclusion: Patients with dental caries are at risk for infective endocarditis. One of the *S. mutans* virulence factors is the formation of biofilms, which facilitate its adherence to heart valves. *S.mutans* supposed to be responsible of infective endocarditis case in patients with dental caries.

Keywords : *Streptococcus mutans*, infective endocarditis, dental caries, biofilm

P-121

Charlson Comorbidity Index in patients with Extended Spectrum Beta Lactamase Infection during January 2023 at Dr. Saiful Anwar Hospital Malang

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Objectives: To analyze the disease in patients with ESBL infection associated with Charlson Comorbidity Index.
Methods: From Culture with ESBL positive results, we screened for "comorbid" by Charlson Comorbidity Index and performed scoring. We also analyzed the most common diseases associated with ESBL infection and also the patient's age.
Results: 59/121(49%) patients in the mild grade CCI. 62/121(52%) patients were 45-60 years old, 42/121(34%) with Renal disease.
Conclusions: Charlson comorbidity index (CCI) as one of the parameter to predict ESBL infection has been widely used with cut off ≥ 4 need to be evaluated according to the different demography and disease prevalencies.

Keywords: ESBL, Charlson Comorbidity Index

P-122

Age Factor and Neutrophil Lymphocyte ratio as predictors of severe COVID-19 Mortality in elderly and pre-elderly patients

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Background: Corona Virus Disease 2019 (COVID-19) is a disease caused by Severe Acute Respiratory Syndrome Corona Virus Disease-2 (SARS-COV-2) which was first discovered in Wuhan, China in December 2019 and has spread widely throughout the world and become a pandemic. Any age is susceptible to COVID-19, but older patients often experience severe degrees of COVID-19. The inflammatory process plays an important role in the development of severe COVID-19, and often causes death.
Objectives: To determine the factors that act as predictors of mortality in elderly and pre-elderly patients with severe COVId-19
Methods: This observational analytic study with a retrospective cohort design was conducted at Bethesda Hospital, Yogyakarta, Indonesia, from June 2020-June 2021. The inclusion criteria were all patients aged ≥ 50 years who were confirmed positive for SAR-COV-2 by RT-PCR examination and declared as severe degree of COVID-19 at the time of admission to the hospital. Exclusion criteria were elderly patients who did not have complete medical record data.
Results: There were 88 COVID-19 patients in this study consisting of 50% male and 50% female patients, of which 62.5% were pre-elderly (50-64 years) and 37.5% elderly (≥ 65 years). This study showed that age ≥ 65 years (RR: 3.441, CI 1.254-9.739, p=0.017) and Neutrophil Lymphocyte Ratio/NLR > 6.09 (RR: 4.748; CI: 1.750-12.881, p=0.002) as predictors of mortality in elderly and pre-elderly patients with a severe degree of COVID-19

Keywords: age, NLR, COVID-19, severe degree, mortality

P-125

Chronic Osteomyelitis caused by extensively-drug resistant *klebsiella pneumoniae* in a patient with post tibia fibula fracture

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Background: Osteomyelitis is a bone infection that can be acute or chronic. In humans, *Klebsiella pneumoniae* is frequently cause urinary, respiratory, or bile duct infections.
Case presentation: A 67-year-old patient suffered from a right tibia fibula fracture and chronic osteomyelitis. We performed bacterial culture from bone and soft tissue specimens taken during surgery/intra-surgery. The specimens were transported with Amies transport medium and inoculated into blood agar and MacConkey agar. After 18 hours incubation, bacterial identification and antibiotic susceptibility test was performed with Vitek 2 System. The bacteria identified as Extensively-Drug Resistance *Klebsiella pneumoniae* that only sensitive to tigecycline. The infection was treated with optimal surgical drainage and debridement, as well as empirical antimicrobial therapy (Meropenem 1 gr/12 hours). The patient had been discharged in a stable condition.
Discussion: Therapeutic options for Extensively-Drug Resistant *Klebsiella pneumoniae* pathogens are limited and based on few case reports and series. Antibiotics and debridement are used to cleanse the wound, stabilize the fracture, and rebuild any soft tissue defects, allowing infection-free bone regeneration. Debridement and synergistic combinations (double and triple combinations such as Ceftazidime-Avibactam, Meropenem-Vaborbactam, Imipenem-Cilastin-Relebactam, Aztreonam Avibactam, Double Carbapenem) can be used with favourable clinical outcome.
Conclusion: Debridement is an important part of treatment and combined with synergistic antimicrobials with excellent bone penetration can be used to improve treatment success.

Keywords: *Klebsiella pneumoniae*, Extensively-Drug Resistant, osteomyelitis, debridement, antimicrobial combinations

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Corynebacterium diphteriae isolated from pediatric patients in Adam Malik Hospital Medan Indonesia

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Background: Detection of causative pathogenic bacteria in infectious patients is essential for surveillance and therapy. Therefore, the role of the laboratory in establishing a rapid, reliable, and accurate diagnosis of diphtheria is needed in clinical diagnosis. Matrix-Assisted Laser Desorption/Ionization Time-Of-Flight mass spectrometry (MALDI-TOF) has high accuracy and can identify microbes quickly compared to biochemical reactions.
Methods: This study was cross-sectional on pediatric patients clinically diagnosed with diphtheria from December 2022 to March 2023 at Adam Malik Hospital Medan. First, throat swabs were taken from the patients. Then the specimens were cultured on Cystine Tellurite Blood Agar (CTBA) and Blood Agar media, aerobic incubation 370 C, 24-48 hours. Isolates with round, grey-black colony characteristics on CTBA medium were suspected as *C. diphtheriae*. Subsequently, the isolates were identified with MALDI-TOF (Bruker) by performing extraction method (method 3) with additional formic acid. Specimens were also sent to the referral laboratory for Polymerase Chain Reaction (PCR) to detect toxigenic *C. diphtheriae* strains, as the standard protocol
Results: Five *C. diphtheriae* isolates were found from the MALDI-TOF assay. Furthermore, of the five *C diphtheriae* isolates, PCR results showed four isolates of *C. diphtheria* mitis + toxigenic and one isolate of *C. diphtheriae* gravis + toxigenic. The results of identifying *C. diphtheriae* using MALDI-TOF followed by PCR showed two different strains.
Conclusions: MALDI-TOF can be used to identify *C. diphtheria* quickly and accurately to help better patient treatment.

Keywords: *C. diphtheriae*, toxigenic, MALDI-TOF

P-129

The trend in rates of extended spectrum beta lactamase-producing escherichia coli during the COVID-19 Pandemic in The Tertiary-level Hospital of Surabaya City

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Background: The number of resistant bacteria in clinical settings has increased, especially Extended Spectrum Beta Lactamase (ESBL) -producing *Escherichia coli*. Characterizing the antibiotic susceptibility pattern of resistant bacteria in the hospital setting becomes important as part of monitoring infections. On the other hand pandemic of coronavirus disease 2019 (COVID-19) emerged in recent years had affected health sectors. Therefore, for monitoring the antimicrobial resistance situation in the COVID-19 era.
Objectives: To characterize antibiotic susceptibility patterns in ESBL-producing *Escherichia coli* in the first four months of 2022 and 2023 in a tertiary-level healthcare setting in Surabaya City.
Methods: Data from microbiological diagnostic examinations from all specimens and the medical information in the first four months of 2022 and 2023 in a tertiary hospital in Surabaya were collected for analysis. Culture identification, sensitivity determinations, and COVID-19 diagnosis were performed according to the standard of procedures.
Result: In the span of the first four months of 2022 and 2023, the positivity rates of COVID-19 were 28,83% and 8,32%. More isolates of *Escherichia coli* were found in 2022 than in 2023. Among identified *Escherichia coli*, the average rate of ESBL-producing in the first four months of 2022 and 2023 were 63,18% and 65,20%. The susceptibility rates toward meropenem were found to decrease in the first four months of 2023.
Conclusions: The average rates of ESBL-producing *Escherichia coli* were higher while COVID-19 rates decreased in this study. The overall impact of the COVID-19 pandemic on ESBL trends required further study.

Keywords: ESBL-producing *Escherichia coli*, antibiotic susceptibility patterns, COVID-19

P-130

Liposomes Formulation of Red Betel Vine Leaf Ethanol Extract (*Piper Crocatum*) As Antibacterial Against *Escherichia Coli*

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Background: Red betel vine leaf of ethanol extract has antibacterial activity. However, the minimum inhibition rate (MIC) and the minimum bactericidal rate (MBC) could be better. Therefore, innovation is needed to improve its antibacterial activity. One drug delivery system is in the form of liposomes. Liposome formulations facilitate the entry of red betel leaf extract into bacterial cells.
Objective: This study aims to obtain a liposome formulation that can enhance the effectiveness of red betel leaf (*Piper crocatum*) antibacterial against *Escherichia coli* (*E. coli*).
Methods: The red betel vine leaf of ethanol extract (*P. crocatum*) was obtained by maceration using 70% ethanol. Preparation of liposome formulas using the thin layer hydration method. Testing the antibacterial activity against *E. coli* bacteria using the liquid dilution method serially.
Results: The selected liposome formulation had a particle size of 368.16 ± 34.64. The antibacterial testing of the liposome formulation of red betel vine leaf ethanol extract against *E. coli* showed an MBC of 0.0039%. The obtained results were much better than the previous study, which used a concentration of 6.25%. The obtained concentration demonstrated excellent antibacterial activity (<1%).
Conclusion: The liposome formulation of red betel vine leaf ethanol extract has good antibacterial activity against *E. coli*. The concentration of <1% is ideal for further development.

Keywords: Red betel vine leaf (*Piper crocatum*), Liposome, *Escherichia coli*, dilution

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Fungal isolated from blood, cerebrospinal fluid and skin lesion from hiv-infected patients

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Objective: Opportunistic fungal infections remain a significant complication in HIV-infected patients during highly active antiretroviral therapy. We aimed to determine the spectrum of fungal isolates from blood, cerebrospinal fluid and skin lesions from HIV-infected patients in Adam Malik Hospital Medan Indonesia.
Methods: The study sample consisted of blood, cerebrospinal fluid and skin lesions from HIV-infected patients during December 2021-March 2023. Steril fluid specimens were inoculated into FAN Aerobic culture media bottles and incubated on the BACT/ALERT automatic culture machine for ten days. Positive cultures bottle and skin lesion specimens were subcultured onto an SDA medium and incubated at 25^0C and 37^0C. Every day for up to four weeks, colony growth was monitored. Microscopic and macroscopic morphological observations were used to identify the hypha. Fungal hypha was evaluated based on microscopic morphology using Lactophenol cotton blue staining while yeast colonies identified using VITEK 2 systems.
Results: Fourteen fungal isolates were isolated from blood, cerebrospinal fluid and skin lesions specimens of HIV patients, consisting of *Cryptococcus neoformans* (43%), *Penicillium marneffei* (36%), and *Histoplasma capsulatum* (21%). Four isolates of *Cryptococcus neoformans* from blood specimens and one isolate of *Penicillium marneffei* were isolated. In addition, one isolate of *Cryptococcus neoformans* was isolated from a cerebrospinal fluid specimen. And from skin lesions, we found isolates of *Penicillium marneffei* (5), *Histoplasma capsulatum* (3), *Cryptococcus neoformans* (1)
Conclusions: *Penicillium marneffei*, *Histoplasma capsulatum* and *Cryptococcus neoformans* were fungal isolates from HIV-infected patients.

Keywords: fungal, blood, cerebrospinal fluid, skin lesion, HIV-infected patients

P-133

Mupirocin sensitivity and the ability to form biofilm in Methicillin Resistant *Staphylococcus aures* isolates at Dr. Moewardi General Hospital Surakarta

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Background: Infection of Methicillin Resistant *Staphylococcus aureus* (MRSA) is still challenging because of limited antibiotic choice and prolonged treatment. Management of the disease caused by MRSA include decolonization with mupirocin and chlorhexidine. Since mupirocin recommended for nasal decolonization, the extensive usage of this topical antibiotic will increase the risk of mupirocin resistant. On the other hand, *S. aureus* has capability to form biofilm as one of the virulence factors, that could affect the prognosis of infection.
Objectives: We study about mupirocin sensitivity and the ability to form biofilm formation among MRSA isolate from clinical specimens during May – October 2022 at dr. Moewardi General Hospital Surakarta.
Methods: Mupirocin sensitivity test used Kirby Bauer disk diffusion method with mupirocin disk 5 µg for identification low level mupirocin resistant and 200 µg for high level mupirocin resistant. Biofilm formation detected with microtiter plate assay method. We collected 64 MRSA isolates from clinical specimens, 37 from pus, 18 from blood and 9 from sputum, respectively.
Results: As result, we found 5 from 64 MRSA isolates (7.8%) with high level mupirocin resistant. From microtiter plate assay, there are 40.6% MRSA isolates produce weak biofilm, and 21.9% moderate biofilm.
Conclusion: The presence of MRSA with high level mupirocin resistant and the ability to form biofilm formation in this study should be a concern because of the risk of treatment failure. In order to control MRSA spreading, implementation of the infection prevention and control program and also comprehensive management of MRSA infection should be done properly.

Keywords: MRSA, mupirocin sensitivity, biofilm

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A four-year analysis of carbapenemase-resistant enterobacteriaceae profile in children in University Teaching Hospital in East Java, Indonesia

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Background: Bacterial infections in paediatric population pose a global threat. Misuse of antibiotics increases the emergence of resistant strains and transmits resistant factors to other pathogens. Carbapenem-Resistant *Enterobacteriaceae* (CRE) in children is devastating.
Objectives: to determine the resistance profile of carbapenemase-resistant *Enterobacteriaceae* in pediatric patients.
Methods: The study was conducted from Jan 2019 to Dec 2022 using data from WHONET5 in Clinical Microbiology Laboratory, Saiful Anwar General Hospital, Malang, Indonesia. Antimicrobial sensitivity tests were performed on 3076 positive cultures from blood, sputum, pus, urine and other specimens from pediatric wards.
Results: We found 88 CRE out of 1102 (8%) *Enterobacteriaceae* isolates from all specimens recorded in four years. The major CRE isolates were *Klebsiella pneumoniae* (n=68, 77,3%). More alarmingly, the number of Carbapenemase-resistant *Klebsiella pneumoniae* had increased triple in number during four years; largely found from respiratory isolates. This analysis also revealed that 19% of the 21 species found were Carbapenemase-Resistant *Klebsiella aerogenes*.
Conclusions: our findings show a high resistance rate to Carbapenem, which suggest the need of precaution in therapy and continued surveillance of antimicrobial resistance.

Keywords: carbapenemase-resistant, *Enterobacteriaceae*, pediatric

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Identification and characterization of *staphylococcus argenteus* from Indonesia

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Background: In 2015, *Staphylococcus argenteus* was reported for the first time as a novel species of the *Staphylococcus aureus* complex. More information is still needed about the pathogenicity of this species. While *S. argenteus* has been found in many countries, its presence in Indonesia is not reported yet.
Objectives: to confirm *S. argenteus* presence in Indonesia, describe its characteristics and analyze its genomic diversity.
Methods: The *S. aureus* isolates used in this study were collected from patients with skin and soft tissue infections in Indonesia, between July 2009 to February 2010 (Santosaningsih *et al*). Randomly selected isolates were recultured from -80C° stocks, identified by MALDITOF-MS and subsequently reidentified using *nucA* PCR. True *S. argenteus* were further characterized by whole genome sequencing (Illumina), to determine sequence types, virulence factors and resistance genes. Vitek2 (bioMérieux) was used for antimicrobial susceptibility testing.
Results: Fifteen isolates were identified as *S. argenteus*, two pairs being identical with the majority belonging to ST2250. Most isolates were susceptible to all antibiotics, except seven isolates (46.7%) that were resistant to benzylpenicillin, and one isolate was resistant to tetracycline (6.7%). Notably, the *sey* enterotoxin gene was prevalent in 80% of the isolates. Other virulence factor genes were less prevalent.
Conclusion: Our study reveals the occurrence of *S. argenteus* in Indonesia. The diversity within Indonesian *S. argenteus* aligns with the global distribution of *S. argenteus.* Identical isolates between patients indicate potential transmission. The lower prevalence of virulence factors suggests that *S. argenteus* is less virulent than *S. aureus.*

Keywords: staphylococcus, virulence, whole genome sequencing, Indonesia

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Biofilm formation ability of carbapenem resistant gram negatif bacilli from clinical specimens: a cross sectional study

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Background: Patients on ventilator support often develop biofilm-associated infections and commonly caused by multi-drugs resistant bacteria. Antimicrobial resistance has become a serious threat in the world.

Objectives: This study aims to determine the proportion of carbapenem-resistant bacteria isolated from sputum samples of pneumonia patients and its ability to form biofilms

Methods: The samples were taken from pneumonia patients using ventilator for more than 48 hours from 3 hospital in Yogyakarta, in the periode of October 2022 to February 2023. Bacterial isolates were identified and tested for antibiotic sensitivity using Vitek 2 system, then tested for biofilm formation ability using microtiter plate biofilm assay.

Results: In this study, 83 isolates of gram-negative bacilli bacteria were obtained. GNBs resistant to Carbapenems were found in 37 (44.57%) isolates, including *Acinetobacter baumannii* 25 (67.56%), *Pseudomonas aeruginosa* 7 (18.91%), Enterobacterales 4 (10.81%) and other non-Enterobacterales 1 (2.7%). Among Carbapenem-resistant GNBs, 29 (78.37%) are strong biofilm formers and 8 (21.62%) are medium biofilm formers. While of the 46 non-carbapenem resistant bacteria, 30 (65.21%) of them were able to form strong biofilms, (23.91%) medium biofilms former, and 5 (10.87%) showed weak biofilms, respectively. Statistical tests were used to analyse the relationship between carbapenem resistance and the ability to form biofilms. Two groups were compared between weak-strong, medium-strong and weak-medium biofilm formers. None showed significant values, 0.0582, 0.6104 and 0.1304, respectively ($p < 0.05$).

Conclusion: The level of carbapenem resistance in this study was high. Most isolates were strong biofilm producers. Carbapenem resistance and biofilm-forming ability were not significantly related.

Keywords : carbapenem resistant, biofilm, pneumonia, ventilator

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Effectiveness of single bulb garlic (*allium sativum* var. solo garlic) and multi bulb garlic (allium sativum) against *staphylococcus aureus, escherichia coli,* and *klebsiella pneumoniae as antibacteria*

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Objectives: Infectious diseases are still one of the most common health problems in Indonesia. The most frequent caused by *Staphylococcus aureus*, *Escherichia coli*, and *Klebsiella pneumoniae* which becoming resistant to the existing antibiotics. Therefore an alternative is needed such as utilizing natural substance with antibacterial effect. The use of herbs has been part of daily lives in Indonesia including the use of garlic (*Allium sativum*). Studies showed that garlic have an antibacterial effect to certain organisms. Two types of garlic that are often used today are single and multiple bulb garlic. In recent years, the use of the single bulb variant is increasing. However, no studies have been conducted to compare the effectiveness between two variants of *Allium sativum* (single and multi-bulbs).
Methods: This study aims to compare the effectiveness of those two variants using diffusion method on *Staphylococcus aureus*, *Escherichia coli*, and *Klebsiella pneumoniae*.
Results: This study revealed that both have antibacterial effect which is indicated by the formation of the inhibition zone on those three bacterias but have no significant difference. Single and multi-bulb garlic have similar antibacterial effectiveness.

Keywords: *Staphylococcus aureus, Escherichia coli, Klebsiella pneumoniae, Allium sativum*, garlic, antibacterial

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Distribution Of Esbl-Producing Enterobacteriaceae and Carbapenem Resistant Organisms in Hospital Wastewater

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Background: Hospital wastewater are recognized as hot spot for selection and dissemination of antibiotic resistant bacteria to the environment of many countries. Extended spectrum beta lactamase-producing Enterobacteriaceae and carbapenem resistant organisms are belongs to critical pathogens for new development of antibiotics according to world health organization. The distribution of ESBL-producing Enterobacteriaceae and carbapenem resistant organisms in Indonesian wastewater is unknown.
Objectives: To explore the distribution of ESBL-producing Enterobacteriaceae and carbapenem resistant organisms and the resistant genes isolated from hospital wastewater in 3 cities in Indonesia
Methods: We collected 500 ml of water from inlet and outlet of hospital wastewater in Surabaya, Semarang and Jakarta. The 100 ml of collected water then filtered using 0.45 µm pore size with 47 mm diameter of filter membrane. The filtered membrane then cultivated on MacConkey agar supplemented with cefotaxime 1mg/ml to get ESBL-producing Enterobacteriaceae and supplemented with meropenem 2mg/ml to get carbapenem resistant organisms. Maximum 3 different morphologies colonies were selected. Only ESBL producing Enterobacteriaceae and carbapenem resistant-*Acinetobacter baumannii* or carbapenem resistant- *Pseudomonas aeruginosa* were tested for genes by PCR method.
Results: The genes were *bla*$_{CTX-M}$, *bla*$_{SHV}$, *bla*$_{TEM}$, *bla*$_{GES}$, *bla*$_{VIM}$, *bla*$_{NDM}$, *bla*$_{KPC}$, *bla*$_{OXA-48}$, *bla*$_{OXA-23}$, *bla*$_{OXA-24}$. Total 15 ESBL-producing Enterobacteriaceae and 7 carbapenem resistant organisms were detected in this study. Eight of 15 (53.3%) ESBL-producing Enterobacteriaceae and four of seven (57.2%) carbapenem-resistant organisms were carrying *bla* genes.
Conclusions: The number of ESBL-producing Enterobacteriaceae and carbapenem resistant organisms collected in Indonesian wastewater were high and need to be explore the genetic characteristics among isolates.
Keywords: ESBL-producing Enterobacteriaceae, Carbapenem resistant-organisms, hospital, wastewater

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The evaluation of Candida score as a predicting rule in critically ill patients with *Candida spp* colonization: a retrospective cohort study

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Background: *Candida spp* infections have increased over the last decades and are frequently associated with high mortality. It is complicated by the increasing triazole resistance, the most common arsenal used to treat Candidiasis. Moreover, the species distribution and resistance rate are highly varied among countries, emphasising the importance of local epidemiology. Not only is the treatment challenging, but the diagnosis is also complex due to the nature of Candida colonization in many body sites. However, the study of Candidiasis in Indonesia highlighting these factors is still limited.
Objectives: To analyze the correlation between the laboratory profile and the clinical characteristics with the outcome of patients whose specimens yielded *Candida spp* at UGM Academic Hospital.
Methods: Recorded laboratory data and clinical characteristics of patients whose specimens yielded in *Candida spp* are collected through electronic health records. The correlation of laboratory profile and clinical characteristics with the outcome were analyzed comparatively using bivariate and multivariate analysis.
Results: Of 185 isolates included, the three major *Candida spp* isolated were *C. tropicalis*, *C. albicans*, *C. parapsilosis* (n=95 (51,4%), n=74 (40%), and n=4 (2,2%), respectively). Ward status, length of stay, number of comorbid, history of steroids, Candida score of ≥3, and mechanical ventilation were significantly correlated with the non-survivor group, while intensive care status and a Candida score ≥3 were found to have the strongest and independent correlation (p=<0.001; OR 11.8; 95% CI 4.368-31.962 and p=0.004; OR 3.9; 95% CI 1.562-9.065, respectively).
Conclusion: The most common *Candida spp* isolated in UGM Academic hospital was *C. tropicalis*. Being in the intensive care unit and having a Candida score of ≥3 were independently correlated with poorer outcomes.

Keywords: *Candida spp*. infections, Candida score, invasive candidiasis

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Modulating effect of heat shock Protein-70 in acute ischemic stroke

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Background: Stroke is an acute neurological condition that can cause morbidity and mortality. Neurobiologically, cerebral ischemia can result in multiple cellular changes such as mitochondrial dysfunction, oxidative stress, inflammatory responses, and release of Reactive Oxygen Species (ROS), which can cause neuronal disfunction. These conditions cause the activation of heat shock protein-heat shock transcription factor to trigger the transcription of heat shock proteins to reduce neuronal damage, including Heat Shock Protein 70 (HSP-70). This paper aims to review the role of modulating HSP-70 in acute ischemic stroke.
Methods: Comprehensive Literature review with search for all the role of HSP-70 and cerebral ischemia in Pubmed, Pubmed Central dan google scholar with keywords Heat Shock Protein, Heat Shock Protein 70, stroke, cerebral ischemia. All experimental, clinical, case report in the past 10 years were included.
Results: Expression of HSP70 was identified 24 hours after stroke. HSP70 protein was expressed in neurons in the cortex around the infarct area and blood vessels in the ischemia area. HSP70 overexpression can reduce apoptosis through multiple pathways. HSP70 inhibit the release of cytochrome c, caspase 3/9, and activation of AKT signal to reduce apoptosis. HSP-70 modulation plays an important role in neuroprotection and is a therapeutic target in managing acute ischemic stroke.
Conclusion: HSP70 can modulate cerebral ischemia as a protective protein by reducing apoptosis.

Keywords: HSP70, Cerebral Ischemia, Neuroprotection

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Profile of pulmonary tuberculosis patients in Jembrana Regency In 2022

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Background: *Mycobacterium tuberculosis* is the cause of Tuberculosis (TB) which is one of the 10 highest causes of death worldwide. In 2015, WHO reported that 10.4 million people fell ill as a result of being infected with TB and 1.8 million died from this disease. Tuberculosis is an infection caused by bacteria that can be spread from one person to another by inhaling small droplets (droplets). TB in its treatment requires fast and precise diagnosis and management, namely by the PCR method using the GeneXpert tool.
Objectives: Knowing the description of the results of the GeneXpert TCM examination in patients with suspected pulmonary tuberculosis (TB) at the Negara General Hospital in 2022.
Methods: This study used a cross-sectional method by taking data from the GeneXpert TCM examination laboratory in patients with suspected pulmonary tuberculosis.
Results: In patients examined by TCM GeneXpert in patients with suspected pulmonary tuberculosis, conducted from January to December 2022, negative MTB results were obtained in 2306 patients (93%), MTB was detected Rifampicin Sensitive in 173 patients (98%), MTB was detected Rifampicin Resistant (TB) MDR) in 3 patients (2%). Overall, mean age was 46,2 years, 52% were male. Majority cases were observed in the adult group (between 18 years old to 60 years old).
Conclusion: Data from 2482 suspected tuberculosis patients who were examined by TCM GeneXpert at the Negara General Hospital in 2022 showed that the frequency distribution of the test results for MTB was detected as Rifampicin Sensitive in 173 patients (98%), MTB was detected as Rifampicin Resistant (MDR TB) in 3 patients (2%).

Keywords: *Mycobacterium tuberculosis*, GeneXpert, TB

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Fungal keratitis caused by aspergillus fumigatus azole resistant in elderly woman with diabetic: a case report

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Background: Fungal keratitis is a serious, potentially sight-threatening infection of the cornea with a poor prognosis and a high rate of blindness (1-45% in infectious keratitis), particularly in patients with diabetes mellitus. *Fusarium sp* and *Aspergillus sp* are two of the most common causes, particularly in developing countries where fungal keratitis is more common.
Case presentation: A 61-year-old woman, as a farmer, presented with chief complaint of pain and discharge from her left eye. One week prior to her admission to Dr. Yap Eye Hospital, she was bitten by an insect and the symptoms developed 2 days later. She felt itching and scrubbed the left eye which became red, blurred vision and fish smell discharge; her condition worsened and she was referred. The patient has a history of diabetes mellitus and hypertension. Eye examination of VOS is 1/300, redness and ulcer with hypopyon.
The patient then did the corneal scraping for microbiology culture in SDA and BA, and the result was fungal keratitis caused by *Aspergillus fumigatus* azole-resistant.
Discussion: Azole fungicides are used in a wide range of applications, including plant and crop protection and the preservation of various materials such as wood. *A. fumigatus* is very common in the environment. Regular use of azole fungicides, which can remain in the soil for several months, can create an environment that contributes to the emergence of azole-resistant strains.
Conclusion: Clinical and environmental azole-resistant strains can be detected using culture media containing an azole antifungal such as itraconazole. There is a need for surveillance programmes using standardised protocols to determine the prevalence of azole resistance in different countries and patient groups.

Keywords: Fungal keratitis, *A. fumigatus* azole-resistant, Dr. Yap Eye Hospital, Yogyakarta

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Comparison of PCR-Hybridization method and Semi-Automatic methods for *staphylococcus aureus* identification

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Background: Methicillin resistant *Staphylococcus aureus* (MRSA) is one of the most significant antimicrobial resistance pathogens worldwide and is reported as a high burden in Asian countries. Rapid identification of MRSA is essential due to the high prevalence and spread of MRSA. Currently, automatic phenotypic and genotypic methods are standard in MRSA detection. However, some health care is not provided with the resources. This study aim to demonstrating whether conventional methods are reliable for MRSA identification
Methods: The 207 samples were collected from various type of specimens, like sputum, blood, wound, ear swab, joint fluid, urine, nose discharge, and internal eye during October 2021 to April 2023. All specimen were performed two type of identification, cultured on Sheep Blood Agar and MacConkey agar for bacterial identification used semi-automatic phenotypic method; and RNA extraction followed by PCR-Hybridization methods were performed for detection of 16s-rRNA for genus Staphylococcus and nuc genes specific for *S.aureus*. Antibiotic susceptibility testing was performed for Cefoxitin. All the data of Staphylococcus were continued for diagnostic test performance analysis.
Results: The bacterial identification indicate 34 samples are genus Staphylococcus. The semi-automatic method in *S. aureus* identification showed 84,62% of Positive Predictive Value, 75% of Negative Predictive Value, 91.67% of sensitivity and 60% of specificity.
Conclusion: Positive Predictive Value for semi-automatic method was 84,62%, with sensitivity 91.67% and specificity 60%. This method still reliable for identification purpose in limited laboratory setting.

Keyword: bacterial identification, PCR, hybridization, semi-automatic

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Role of nutritional status with multidrug-resistant tuberculosis in Indonesia: a systematic review

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Background: Tuberculosis (TB) remains a significant public health challenge in Indonesia, with high rates of TB incidence, prevalence, and mortality. In recent years, there has been increasing evidence suggesting a potential relationship between the nutritional status of individuals and the development of multidrug resistance (MDR) in TB.
Objectives: to elucidate role of nutritional status in MDR-TB. We conducted a systematic review according to Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) protocols.
Methods: he literature was searched by using keywords in Pubmed, Science Direct Scopus, and Google Scholar databases. We critically reviewed 150 articles and selected 17 studies that met the inclusion criteria.
Results: From the data analysis, it was found that 58% of patients had poor nutritional status and 36% were normal, while 7% of patients were overweight and obese.
Conclusions: From this finding, it can be concluded that malnutrition plays a role in the occurrence of MDR-TB through various mechanisms. Improving nutritional status is an absolute thing that must be done in order to suppress the occurrence of TB, especially MDR-TB.

Keywords: multidrug-resistant tuberculosis, nutritional status, underweight,

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Determination of total flavonoid content of extract and fractions of mangrove leaves (*avicennia marina*)

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Background: Mangrove leaves *(Avicennia marina*) are plants from the Avicenniaceae family which have antioxidant, antiviral and antibacterial activities caused by secondary metabolites in mangrove leaves in the form of flavonoid compounds. Research on the total flavonoid content of 96% ethanol extract and the water, ethyl acetate, and n-hexane fractions of A. marina leaves has never been carried out.
Objectives: The purpose of this research was to determine the total flavonoid content in extracts and fractions of A. marina mangrove leaves using the UV-Vis spectrophotometry method.
Methods: Extraction was carried out using 96% ethanol by sonication method, then fractionation was carried out using n-hexane, ethyl acetate and air as solvents. The extracts and fractions obtained for their secondary metabolites were identified by test tube and thin layer chromatography and then the total flavonoid content was determined by the colorimetric method.
Results: Mangrove leaf extracts and fractions contain secondary metabolites of flavonoids, phenolics, saponins, steroids, triterpenoids, and alkaloids. The results of the thin layer chromatography indicated that the extracts and fractions of mangrove leaves contained flavonoid compounds. Total flavonoid content in 96% ethanol extract, air fraction, ethyl acetate fraction, and n-hexane fraction of A. marina mangrove leaves respectively were 19.3715; 3.0786; 11.3064; and 56.6260 mg quercetin equivalent/gram sample.
Conclusions: *A. marina* was potentially developed to be the traditional drug

Keywords: Mangrove leaves (*Avicennia marina*), total flavonoid content, spectrophotometry UV-Vis

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Identification of covid-19 antigen in the purulent discharge of patient with acute and chronic suppurative otitis media

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Background: Acute and chronic otitis media are common disease in developing countries. It usually altered by the acute respiratory tract infection (ARTI) through eustachian tube. In the pandemic Covid-19 era, ARTI may also cause by this viral infection. Therefore, it presumably that Covid-19 viral antigen could be found in the purulent discharge of patient with acute and chronic otitis media.
Objectives: To measure the presentation of Covid-19 antigen on discharge acute and chronic otitis media.
Methods: Rapid antigen testing to the purulent discharge from patients with acute and chronic otitis media was done by following the manual instruction. After 5 minutes, the result can be read in the cassette. Positive if there were 2 red line and negative if 1 red line found in the cassette.
Results: During the study periods, there were 47 subjects included in the study, 17 (36,7%) with acute otitis media and the rest was chronic otitis media. The average age of the subjects was 30,9 years old with the younger age was 2 years old while the oldest was 70 years old. Male and female ratio was 60:40. Unfortunately, all sample found negative Covid-19 antigen in this study. In this study, authors did not perform the comparison with the nasal or nasopharyngeal swab antigen. The future study should be done with better design to make sure the presentation of the covid-19 in the purulent discharge from middle ear.
Conclusions: Covid-19 antigen could not be detected in the purulent discharge from middle ears, however, a further study should be done validate this finding.

Keywords: Acute otitis media, chronic otitis media, covid-19, rapid antigen

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Association between neonatal asphyxia and neurodevelopmental outcome in children 1-3 years old

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Background: Neonatal asphyxia is defined as failure to initiate or maintain spontaneous breathing in neonates. The most common complications of neonatal asphyxia is hypoxic-ischemic-encephalopathy which is typically associated with neurodevelopmental disorders in later life. Therefore it is very important to monitor the neurodevelopmental achievement of children at risk. This study aims to analyse association between neonatal asphyxia and neurodevelopmental delayed in children 1-3 years old.
Methods: This study used a retrospective cohort study design. Subjects aged 1-3 years old without any congenital malformation were selected. Neurodevelopmental level was assessed using Denver II test. Perinatal history collected as secondary data based on the MCHC handbook on the selected sample. Data analysis was performed using the Chi Square test.
Results: There were 62 subjects, mostly 25-36 months old (51,6%), with perinatal history in full term (59,7%) and normal birth weight (91,9%). A total of 20 children (32.3%) were found to have developmental delays. It was showed a higher incidence of developmental delay in children with history of asphyxia compared to non-asphyxia subjects (29,0%vs.3,2%;p=0.001). Specifically, developmental delays significantly occurs in gross motor aspect (12,9%vs.1,6%;p=0,026), fine motor aspect (11,3%vs0%;p=0,011), and language aspect (14,5%vs.1,6%;p=0,006). There were 6(9,7%) subjects with asphyxia who experienced global developmental delay (p=0,024).
Conclusions: There is a significant association between neonatal asphyxia and developmental delay in children aged 1-3 years. Developmental delay occurs in almost all aspect of developmental domain, specifically at motoric and language aspect, seems to be a serious concern and need further management.

Keywords: Neonatal asphyxia, Neurodevelopmental, Denver II Test, Developmental Delay

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Pericarditis TB in Children : A Case Report

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Background: In 2021, Indonesia is in second place with the highest number of TB sufferers in the world, namely 969,000 cases, which increased 17% compared to 2020. The incidence of TB pericarditis is only 0.5-4% of TB in children. Pericarditis TB is a rare case of extrapulmonary TB. There are difficulties in diagnosing patients with pericarditis TB and its effects can be life-threatening if not recognized and treated appropriately.
Case Presentation: A 16-year-old female patient presented with chief complaints of shortness of breath, intermitten fever, and prolonged cough. The patient came with a result of massive pericardial effusion and signs of cardiac tamponade on echocardiography. Thus, pericardiocentesis was immediately performed at NTB General Hospital. Based on the TB score in children, the patient had a score of 6 and the results of gene Xpert TB test were positive without rifampicin resistance. Anti-tuberculosis drugs initial phase (rifampicin, isoniazid, pyrazinamide, ethambutol) was given for 2 months and followed by continued phase (rifampicin and isoniazid) for 10 months. Methylprednisolone 12 mg was prescribed to this patient for 2 weeks. After receiving therapy, there was rapid improvement in the patient's condition.
Conclusion: Proper diagnosis of pericarditis in children is required due to the non-specific characteristics of the symptoms. A correct diagnosis will give a good outcome and prevent mortality.

Keywords: Tuberculosis, Pericarditis TB, children, pericardiocentesis

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Necrotizing community acute pneumoniae with massive hemoptysis et causa pseudomonas aeruginosa

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Background: Community Acquired Pneumonia (CAP) in previously healthy patients due to *Pseudomonas aeruginosa* is rare and less commonly causes necrotizing pneumonia. We report a case of *P. aeruginosa* CAP that progressed to necrotizing pneumonia with massive hemoptysis.

Case Presentation: -53-year-old female was referred from other Hospital with massive hemophtysis (more than 100-600 ml/24 h). She has shortness of breath, cough with white mucus, intermittent right chest pain and hearth burn for 4 days. She had no fever, good appetite and no weight loss. History of contact history with TB patient was 3 years ago, prolonged coughing history was denied, no history of smoking, diabetic and hypertension before. Physical examination revealed pneumonia. Laboratory test result leukocytosis. Chest x-ray and MSCT Thorax + contras showed inhomogen consolidation dextral medius lobus indicate an old TB pneumonia . Bronchoscopy described as chronic inflammation and cicatrix mucous of dextral bronchus. Bronco-alveolar lavage Sputum GeneXpert TB test and AFB (Acid Fast Basil) smear were negative, while direct microscopic gram smear showed negative gram basil. Culture revealed *pseudomonas aeruginosa* aerobic incubation at 37◦C, which was resistant to clindamycin, ceftriaxone, and cefotaxime. The patient was started on ceftriaxon and metronidazole by intravenous route for 3 days. After the culture result, antibiotic was changed to levofloxacin 750 mg/24h/iv, thus clinically showed improvement.

Discussion: *P. aeruginosa* adaptive ability pathogenesis like EF-2 elongation inhibit exotoxin A and reactive oxygen species and escaping from host defense, leading to damage the respiratory system. Cicatrix mucous of dextral bronchus Massive hemophtysis indicate pulmonary parenchymal destruct in this patient. *P. aeruginosa* CAP can be treated by Flouroquinolone.

Conclusion: Progressive CAP et causa *P. aeruginosa* could be fatal, need a comprehensive examination and aggressive treatment.

Keyword: P.Aeruginosa, necrotizing CAP, massive hemophtysis.

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Detection of Mycobacterium tuberculosis (MTB) bacteria in the air in the waiting room at the Puskesmas in Surabaya 2023

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Background: Tuberculosis is a dangerous and highly contagious disease. WHO reports that the estimated number of people diagnosed with TB in 2021 globally is 10.6 million cases, an increase of around 600,000 cases from 2020 which is an estimated 10 million cases of TB. Of the 10.6 million cases, there were 6.4 million (60.3%) people who had been reported and were undergoing treatment and 4.2 million (39.7%) others had not been found/diagnosed and reported. Indonesia itself is in SECOND position with the highest number of TB sufferers in the world after India. In 2020, Indonesia is in third place with the highest number of cases, so 2021 is clearly no better. TB cases in Indonesia are estimated at 969,000 TB cases (one person every 33 seconds). This figure is up 17% from 2020, namely 824,000 cases. The incidence of TB cases in Indonesia is 354 per 100,000 population, which means that for every 100,000 people in Indonesia there are 354 of them suffering from TB.
Methods: We took air from a health centre in Surabaya and then cultured it in MGIT media. Of the 36 air samples we collected, 12 were from waiting rooms, 12 from examination rooms and 12 from laboratory rooms.
Results: Positive culture results were 6, 1 and 0. Apart from the 6 positive ones, 4 were MOTT.

Keywords: TB, MOTT, public health centre, air

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Identification test of bacterial species and resistance genes from infectious patients using mdr direct flow chip molecular technique compared to conventional techniques

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Background: Antimicrobial resistance is a threat to global public health, as it can increase morbidity and mortality. Delays in the detection of infectious pathogens will cause problems in determining definitive antibiotic therapy for the causative pathogen. The gold standard method for infection is culture but this takes 3 days to detect the definitive pathogen. Molecular methods offer rapid pathogen identification. We evaluated the use of the latest molecular technique, MDR Direct Flow Chip. This MDR Direct Flow Chip technique can identify the 5 most common bacterial species that are the causative pathogens, such as *Staphylococcus aureus, Klebsiella pneumoniae, Pseudomonas aeruginosa, Escherichia coli,* and *Acinetobacter baumanni*. A total of 55 resistance gene markers were obtained from direct specimens. While the technique that is usually done by many laboratories and already exists is the VITEX II Compact technique. So that this study is aimed at comparing the results of species identification and resistance genes.
Objectives: This study is aimed at comparing the results of species identification and resistance genes.
Methods: The research method used was cross-sectional, positive samples using various specimens such as sputum, pus, blood, etc. obtained from infectious patients who carried out examinations at the Clinical Microbiology Laboratory, Faculty of Medicine, Universitas Indonesia from January to April 2023. Samples from patients with infection were collected and incubated in a culture device. Positive samples were subjected to amplification hybridization using MDR Direct Flow Chip assay and culture.
Results: A total of 40 samples subjected to MDR Direct Flow Chip assay, 5 genus/ species, and 31 resistance genes were detected. The sensitivity, specificity, and conformity were 80%, 94.2%, and 94.68 % respectively. MDR Direct Flow Chip assay offers promise to identify pathogens from positive blood culture in patients with infections and may support the antimicrobial stewardship program in hospitals.

Keywords: MDR, multidrug resistance, MDR direct flow chip kit, infection, amplification-hybridization; antimicrobial stewardship.

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Relationship between exosomes and laryngeal cancer: review article focus on Cd9 and Mirna Expression

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Background: Cancer is one of the deadliest chronic diseases in the world. Laryngeal cancer represents one-third of head and neck cancers and can be a significant source of morbidity and mortality. In the pathogenesis of various diseases, the process of communication between cells, there is a role of exosomes. Exosomes are vesicles excreted by cells and contains miRNA. CD9 proteins, which are known to possibly play a role in carcinogenesis, are also secreted by exosomes.
Objectives: The aim of this study is to explore the relationship between CD9 and miRNA expression inside exosomes in laryngeal cancer.
Methods: Elaborating article related to this topic by searching in some search engine including proquest and pubmed.
Results: There are studies that suggest CD9 is associated with migration, proliferation, and metastasis of the tumor cell. CD9 expression levels vary depending on cancer clinical stage. CD9 expression is lower in patients with stage III-V compared to patients with stage I-II. Other studies in cancer patients show miRNAs in a circularized multivesicular (MV) form. This is related to the potential of miRNA in the blood as a stable noninvasive biomarker in serum and plasma for early cancer diagnosis.
Conclusion: There is a relationship between CD9 and miRNA level expression inside exosomes in laryngeal cancer.

Keywords: CD9, miRNA, exosomes, laryngeal cancer, cancer stage, therapy

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Pyogenic liver abscess following a history of mild abdominal trauma: a case report

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Background: Pyogenic liver abscess (PLA) is marked by a purulent-filled-cavity within liver parenchyma due to bacterial infection. Incidence rose in the pediatric population over ten years to 13.5 cases per 100,000 hospitalizations, with hepatobiliary malignancies as the primary risk factor. Blunt abdominal trauma rarely reported as a risk for PLA. This case is likely the first reported pediatric PLA after mild abdominal trauma in Indonesia.
Case Presentation: A 17-year-old Asian male presented with a two-week history of fever and upper right abdominal pain. Contrast-enhanced computed tomography (CT) scan showed a solitary liver lesion, indicating a liver abscess. The patient experienced multiple kicks to the upper abdomen about a week before symptoms appeared. Treatment included parenteral antibiotics' cefoperazone-sulbactam with metronidazole and surgical drainage. Abscess culture yielded negative result.
Discussion: Liver abscess from blunt trauma is rare (0.7 – 1.5% of cases). Upper abdominal trauma can cause liver hematoma, creating a favorable environment for bacterial proliferation. Moreover, collecting pus for analysis after prescribing antibiotics, especially in low- and middle-income countries (LMICs), can lead to an underestimation of abscess bacteria and hinder physicians' ability to determine appropriate antibiotic treatment. Initially, broad-spectrum parenteral antibiotics (i.e., third-generation cephalosporin) are given and adjusted based on culture report. Insufficient anaerobic coverage requires adding metronidazole. Additionally, cefoperazone-sulbactam demonstrates excellent clinical effectiveness and safety when used to treat intra-abdominal infections.
Conclusions: Blunt abdominal trauma can potentially cause liver abscess. Early diagnosis and prompt initiation of appropriate antibiotic treatment are crucial for a favorable prognosis.

Keywords: Antibiotic, Blunt abdominal trauma, Pediatric, Pyogenic liver abscess

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Correlation of cycling speed and maximum oxygen consumption (vo2max.) based on age in cyclists in The Bicycle Community, Mataram City, Nusa Tenggara Barat

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Background: Cycling regularly with adequate load or intensity can increase maximum oxygen consumption (VO2max.). The speed of oxygen consumption during exercise increases with speed enhancement. VO2max. influenced by age that it will decrease with age.
Objectives: The aim of this research is to determine the correlation between cycling speed and maximum oxygen consumption (VO2max.) based on age of cyclists in the cycling community of Mataram City, West Nusa Tenggara.
Methods: This research is a cross-sectional study involving 34 respondents, who are cyclists in the cycling community in Mataram City, which were determined using a consecutive sampling technique.
Results: The results showed that there was a significant correlation between cycling speed and VO2max. in the group of cyclists aged less than 40 years ($p \leq 0.05$), but not in the group of cyclists aged 40-50 years and more than 50 years.
Conclusions: The higher the speed the higher the VO2max value.

Keywords: cyclist, VO2max, speed, age

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Permanent pacemaker expulsion due to methycillin-resistant staphylococcus: a case report

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Background: Cardiovascular implantable electronic devices (CIEDs) including permanent pacemaker (PPM) play an important role in the treatment of arrhythmias. The major complication in CIED is infection and become the common cause for lead removal.
Case Illustration: A 70-year-old male came to emergency department with chief complaint of left chest pain at the PPM pocket site since 1 weeks ago. He also complained of redness of the surrounding skin at the PPM insertion site. He has a history of complete heart block and a left-sided pacemaker was placed in May 2022. Physical examination documented there is no abnormality in patient's vital signs and cardiovascular examination, and evidence of pocket infection and generatol expulsion at sites on left sides of the chest. From laboratory examination we found slightly leukocytosis. Blood cultures revealed methicillin-resistant *Staphylococcus*. The patient was planned for total device system removal and replaced with temporary pacemaker. The patient was given vancomycin injection, mefenamic acid and after 6 days in the ward, the patient planned for PPM insertion on the right side.
Discussion: The incidence of PPM pocket infection has increased significantly. When PPM pocket is colonized by infection, appropriate antibiotic treatment and total device removal is the standard of treatment. The indications for new device implantation after infection eradication should be critically reassessed.
Conclusions: Untreated PPM pocket infection can cause high mortality. System-wide infection control measures and team-based multidisciplinary management of patients are essential for optimal outcomes.

Keywords: pacemaker, expulsion, *Staphylococcus*

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Macular RNFL thickness and glicated hemoglobin blood level correlation with diabetic retinopathy severity in diabetic population in Mataram, West Nusa Tenggara

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Background: More than 30% of type II diabetic patients will develop diabetic retinopathy (DR) in various severity during their lifes. Diabetic retinopathy still a major cause of avoidable blindness in the world. Blood glucose control determined by glycated hemoglobin (HbA1c) level in blood, hypertension and hyperlipidaemia are known risk factors for DR severity and progression. Around 10% of DR patients ended with severe low vision or blindness due to macular oedema and retinal detachment.
Objectives: The study aims to analyse correlation between macular retinal nerve fiber layer (RNFL) thickness and HbA1c blood level to DR severity in diabetic patients of PROLANIS community in Mataram, West Nusa Tenggara.
Methods: This cross-sectional study gathers data from fundus examination, ocular computed tomography (OCT) and blood test results. Retinal nerve fiber layer thickness and DR grading are assessed based on Early Treatment of Diabetic Retinopathy Study (ETDRS) classification.
Results: We collect data from 18 eligible diabetic patients, mostly women (61.1%); age range 61-70 years old (mean 61.78, SD 10.855); 5 (27.8%) patients have DR, 38.9% patients have HbA1c level >8%, and mean macular RNFL thickness of right eye (OD) is 228.39um (SD+ 36.714); OS 254.33 um (SD+ 88.716). Increasing RNFL thickness is found in 3 (8.33%) eyes with clinically relevant diabetic macular oedema (DME). Bivariate analysis shows p= 0.324 for macular RNFL thickness and p= 0.710 for HbA1c blood level. Absence of correlation might be the result of DME placement in the DR classification where it has not yet considered as severe as prolipherative DR (PDR). Poor control of blood glucose showed by HbA1c >8% in more than 1/3 of patients doesn't necessarily causing more severe DR since DR is a disease with multiple risk factors.
Conclusions: Further study with improved DR classification for DME may show the role of macular RNFL thickness as predictor for DR severity even progression.

Keywords: diabetic retinopathy screening, risk factors, biomarkers for progressions.

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