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Welcome Message

All praises to Allah, the most merciful, beneficent and compassionate, for His blessing that this conference could be organized today. I would like to express my greatest gratitude to Prof. Dr. Yos Johan Utama, S.H., M.Hum; Rector of Universitas Diponegoro, Dr. dr. Dwi Pudjonarko, M.Kes, Sp.S (K); Dean of Faculty of Medicine Universitas Diponegoro, Prof. Dr. Jamari, S.T., M.T.; Director of LPPM, Dr. dr. Hermina Sukmaningtyas, M.Kes., Sp.Rad and Dr. dr. Udadi Sadhana, M.Kes, Sp.PA, Vice Deans of Faculty of Medicine for all of their kind supervision during the preparation of this event. I would like to express my sincere gratitude to all of the committee members for all of your hard work, kind help, and best effort as a solid team work, by which this event can be held successfully even during the COVID-19 pandemics. I would like to thank all of the honorable speakers for your willingness to give lectures and all of participants from various institutions in the world. Welcome to the 4th International Conference on Translational Medicine and Health Sciences (ICTMHS) 2020. It is a great pleasure to announce that this is the first virtual ICTMHS, which is traditionally held in Semarang, Indonesia. ICTMHS is an annual routine program that began in 2017 initiated by the faculty to support the university’s vision of becoming a world class university. The theme of this conference is “Unraveling the New Normal Guideline Treatment of Diseases in COVID-19 Pandemic”. This difficult time has pushed us to strengthen our collaborative practices in the health sectors including Interprofessional Education and Research, Collaborative Practice, Translational Medicine, and Nutrition, Dietetic and Food. This is an interesting theme that invites all health workers to unite to increase collaboration in various aspects to tackle the pandemics affecting our country and beyond. Through this conference, we hope to contribute in introducing and educating the scientific community on the recent advances in the medical, dentistry, nursing, pharmaceutical, and nutrition sciences field. As a major goal of this event, we hope that it can be an excellent chance to discuss interesting ideas and develop fruitful project in the future, network opportunities with old and new colleagues, coordination new partnerships which advance collaboration either about the research field or not, as well as the careers of all participants. Please enjoy your participation in ICTMHS 2020.

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Dila Junita, Agung Aji Prasetyo, Endang Mahati, Mulflihatul Muniroh, Tri Nur Kristina

Giant scalp hemangioma: propanolol medication prior to definitive delayed surgical treatment
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Effect of Glutathione Administration as Adjuvant Therapy to NO and MDA Level in Wistar Rat Peritonitis Model
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Sleeve gastrectomy and pancreas omentoplasty improved β cell insulin expression and Interleukin-1β (IL-1β) serum level in non-obese diabetes mellitus rat
Dimas Erlangga, Ignatius Riawanto, Abdul Mughni

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Taufik Eko Nugroho1, Satrio Adi Wicaksono, Familia

Neurogenic pulmonary edema in ruptured intracranial aneurysm: a disconcerting management in pandemic era
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Critically ill COVID-19 survivor treated with favipiravir: a case report
Nur Farhanah, Fathur Nur Kholis, Thomas Handoyo, Friska Helena Silitonga, Budi Setiawan, Damai Santosa, Hery Djagat Purnomo, Johan Arifin, Jati Listyanto, Danu Susilowati, Aria Dian Primantika, Retnaningsih, Muchlis Achsan Udji Sofro

19. PEDIATRIC
The differences of lactate dehydrogenase (LDH) levels and activin a levels among major thalassemia and non-thalassemia
Ryan Alexander Gunawan, Rina Pratiwi, Ariosta, Nyoman Suci Widjastiti

The differences of 25-Hydroxyvitamin D and malondialdehyde levels among major thalassemia and non thalassemia
Poa Olivera Laurenzia Caroline, Rina Pratiwi, Ariosta, Nyoman Suci Widjastiti
ABSTRACT

Reproductive health is associated with the ability to get offspring which cannot be separated from the existence of women. The events of pregnancy, childbirth and postpartum during the Covid-19 pandemics are experiences in themselves for Indonesian women. In addition, Indonesian women also contribute to programs to break the chain of transmission and carry out the prevention of covid 19. Self-care and family care is a pillar in this regard. Various programs initiated by the central government and local government in their implementation require the participation of women. The role of women in preparedness includes PKK mothers in guarding their neighbors during independent isolation, ensuring that pregnant women until postpartum remain healthy and can implement health protocols. Keeping his family met when a family member is giving birth. During the pandemic there was a transformation in education that involved women to improve reproductive health, women used more information systems and applications in accessing health information and in the involvement of health services.

Keywords: transformation of education, Indonesian women, reproductive health.

INVITED SPEAKER

Nutrition therapy in Non-intensive care unit Covid-19 patients

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Until recently, more than 2 million people worldwide has been infected by coronavirus disease 2019 (COVID-19). Nutrition therapy is a pivotal component in supporting patient recovery. Common symptoms in COVID-19 patients are fever, cough, and shortness of breath. There are also gastrointestinal symptoms often experienced such as diarrhea, nausea, vomiting, abdominal discomfort, gastrointestinal bleeding. Acute kidney injury also possibly occurs and worsen the outcome. All mentioned above makes COVID-19 patients require an optimal nutrition therapy customized to their condition. Identification of malnutrition risk is an initial step which should be performed in all patients. Malnutrition screening tools available to be used are Malnutrition Universal Sirconing Tools (MUST), Nutritional Risk Screening (NRS 2002), Subjective Global Assessment (SGA) or Global Leadership Initiative for Malnutrition (GLIM). While for elderly, Mini Nutritional Assessment (MNA) is the validated screening tool. Two chronic medical conditions present in one patient will raise the risk of malnutrition. Specific nutrients restriction often needed in patient with multiple comorbidities. A balanced diet is recommended for COVID-19 patients. Based on European Society of Parenteral Enteral Nutrition (ESPEN) recommendation, energy requirement for COVID-19 patients are 30 kcal/kgBW/day. Protein administration is > 1 g/kgBW for patients under 60 years old. Severely malnourished patients will also demand vitamin and mineral supplementation. Oral nutritional supplements (ONS) should be considered to fulfill nutrition need. Special attention should also be given to COVID-19 patient under home-isolation.

Keywords: nutrition, covid-19, management.

Rehabilitation for Covid-19 patient

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The coronavirus disease 2019 (COVID-19) outbreak initially appeared in Wuhan, China in December 2019, and it has quickly evolved into a worldwide pandemic, including Indonesia. COVID-19 is a highly infectious respiratory infection disease, which leads to respiratory, physical, and psychological dysfunction in affected patients.

For COVID-19 patients, whether have mild or severe symptoms, face their own risks to developing low functional capacity. In many cases, patients remain bedridden in the intensive care unit (ICU) for extended periods. Patients often get many complications due to long immobilization. Rehabilitation management will be needed not only for those who have become deconditioned as a result of movement restrictions, social isolation, but also for survivors of COVID-19, especially many of whom are older, with underlying health problems. While the rehabilitation program is a very important management to be applied, it also needs a careful consideration on managing and treating patients regarding acute phase and specific conditions. The process of rehabilitation, which is led by Physical and Rehabilitation (PM&R) team is focused on helping people who have suffered an impairment to maximize functional ability, psychological well-being, and social integration. Thus, improving quality of life for COVID-19 patient.

Keywords: rehabilitation, exercise, management.

Self care of Indonesian women in improving reproductive health during the pandemic Covid-19

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Various programs initiated by the central government and local government in their implementation require the participation of women. The role of women in preparedness includes PKK mothers in guarding their neighbors during independent isolation, ensuring that pregnant women until postpartum remain healthy and can implement health protocols. Keeping his family met when a family member is giving birth. During the pandemic there was a transformation in education that involved women to improve reproductive health, women used more information systems and applications in accessing health information and in the involvement of health services.

Keywords: transformation of education, Indonesian women, reproductive health.
Heart failure: new horizon in basic and clinical science

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Heart failure (HF) is a global epidemic affecting millions of individuals worldwide. Although important progress has been made in the management of HF, this condition remains a common cause of morbidity and mortality. It is a clinical syndrome characterized by dyspnea or exertional limitation due to impairment of ventricular filling or ejection of blood or both. It is classified as HF with reduced (<40%) LVEF (HFrEF) and preserved (≥50%) LVEF (HFrEF).

The goals of treatment in patients with HF are to improve their clinical status, functional capacity and quality of life, prevent hospital admission and reduce mortality. Neuro-hormonal antagonists including angiotensin-converting enzyme inhibitor (ACEI), angiotensin receptor blocker (ARB), mineralocorticoid receptor antagonist (MRA), and beta-blockers have been shown to improve survival in patients with HFrEF and are recommended for the treatment of every patient with HFrEF unless contraindicated or not tolerated. Over the last 30 years, improvements in treatments and their implementation have improved survival and reduced the hospitalization rate in patients with HF, however, its outcome still remains poor.

Recent advances in the management of HF have led to exciting new pharmacological options. Among these, the angiotensin II receptor/neprilysin inhibitor (ARNI) valsartan/sacubitril has already proven highly effective in HFrEF. More recently, sodium-glucose cotransporter 2 (SGLT2) inhibitors have further improved outcomes, significantly reducing cardiovascular mortality and HF hospitalization irrespective of diabetes status. Vericiguat, a soluble guanylate cyclase (sGC) stimulator, also reduced HF hospitalization in high-risk patients with HFrEF.

Basic and clinical studies have shown repeatedly that chronic inflammation in the heart provokes LV remodeling and failure. Therefore, the regulation of chronic inflammation is expected to be the novel treatment strategy for HF. I will introduce the recent advances in the standard treatment of HF as well as new information regarding the novel therapy targeting chronic inflammation as the pathogenesis of HF.

Keywords: heart failure, insight, left ventricle.

Update in clinical management of Covid-19

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Coronavirus disease 2019 (COVID-2019) is a viral infection caused by SARS-CoV-2, which has already infected nearly 48 million people worldwide resulting in more than 1.2 million deaths globally, as of November 5, 2020. There is currently no specifically approved treatment to cure COVID-19. However, many different clinical trials have been launched as attempts to introduce new vaccines or therapeutic agents and to evaluate the efficacy of different existing medications and clinical managements such as antiviral drugs, antimarial drugs, immunomodulatory drugs, stem cell therapy, convalescent plasma therapy, and others with conflicting results. Scientific discovery and clinical data for SARS-CoV-2 infection is evolving rapidly, thus it is necessary to provide an updated general overview of current literature to determine the best strategy in clinical management of COVID-19. Immune-based therapy, plasma from donors who have recovered from COVID-19 may contain antibodies to SARS-CoV-2 that may help suppress the virus and modify the inflammatory response. Convalescent plasma met the “maybe effective” criterion for Emergency Use Authorization (EUA), but there are insufficient data to establish the efficacy or safety of convalescent plasma due to the lack of a randomized, untreated control group and potential confounding. Mesenchymal stem cells and non-SARS-CoV-2-specific IVIG is not recommended unless specifically indicated for the treatment of complications that arise during the course of COVID-19. Dexamethasone and other corticosteroids with or without remdesivir are only recommended for hospitalized patients who require supplemental oxygen or require delivery of oxygen through a high-flow device, noninvasive ventilation, invasive mechanical ventilation, or extracorporeal membrane oxygenation. It is not recommended in patients who are not hospitalized or who are hospitalized with moderate disease but do not require supplemental oxygen. Antiviral therapy, remdesivir is the only FDA-approved drug for the treatment of COVID-19. Remdesivir is an intravenous nucleotide prodrug of an adenosine analog that binds to the viral RNA-dependent RNA polymerase, inhibiting viral replication through premature termination of RNA transcription. It has demonstrated in vitro activity against SARS-CoV-2. Favipiravir is a purine analogue that inhibits the RNA dependent RNA polymerase of influenza and other RNA viruses. It was found to have in vitro activity against SARS-CoV-2, however the in vivo activity is uncertain. Clinical trials assessing favipiravir for treatment of COVID-19 are ongoing, and currently there are not enough data to make recommendation regarding favipiravir in treatment of COVID-19. Chloroquine or hydroxychloroquine with or without azithromycin, lopinavir/ritonavir and other HIV protease inhibitors, as well as ivermectin are not recommended. Anticoagulant, this treatment is recommended in patients with who experience or highly suspected to have thromboembolic disease, require extracorporeal membrane oxygenation or continuous renal replacement therapy, or who have thrombosis of catheters or extracorporeal filters. Low molecular weight heparin or unfractionated heparin may be preferred in hospitalized, critically ill patients because of their shorter half-lives, ability to be administered intravenously or subcutaneously, and fewer drug-drug interactions compared with oral anticoagulants. Hemodynamic support for the acute resuscitation of adults with COVID-19 and shock, buffered/balanced crystalloids is recommended over unbalanced crystalloids, and initial use of albumin for resuscitation is not recommended. Norepinephrine is recommended as the first-choice vasopressor. Low-dose corticosteroid therapy (“shock-reversal”) is recommended in adults with refractory septic shock who are not receiving corticosteroids to treat their COVID-19. Ventilation treatment, high-flow nasal cannula (HFNC) oxygen is recommended over noninvasive positive pressure ventilation (NIPPV) for adults in the absence of an indication for endotracheal intubation. Low tidal volume (VT) ventilation (VT 4–8 mL/kg of predicted body weight) is recommended over higher tidal volumes (VT >8 mL/kg) in mechanically ventilated adults with COVID-19 and ARDS. For mechanically ventilated adults with COVID-19, severe ARDS, and hypoxemia despite optimized ventilation and other rescue strategies, an inhaled pulmonary vasodilator is recommended as rescue therapy. There are insufficient data to recommend either for or against the routine use of extracorporeal membrane oxygenation (ECMO) for patients with COVID-19 and refractory hypoxemia.

Keywords: management, Covid-19, update.
Medical education in pandemic era

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Pandemic era COVID-19 has resulted in a revolution in medical education all over the world for both undergraduate and postgraduate. All clinical rotation for undergraduates and hospital residency has also been shortened. However, this pandemic also provides an excellent opportunity for medical educators to power information technology and posing lecturer and students for distance learning. All medical schools have quickly adapted to the online teaching with the shifting of live clinical exposure to the virtual one, such as online cases discussions, videos of clinical examinations, virtual simulators, tele-health, tele-education, etc. From a pedagogical perspective, medical students should be treated as junior doctors as a part of the healthcare team. Thus, students are subject to the same risks and duties. We don't know precisely when the pandemic will stop. Hence, our students will remain susceptible to this virus. We must remember that medical students are not under the same contractual obligations as healthcare workers. Therefore, the risks to the students’ health might not outweigh the benefits. Consequently, we should train all medical students and residents to comply with personal protective equipment (PPE) and follow the health protocol. To acquire doctor competencies, students should be more active learners by implementing adult learning, self-directed learning, collaborative learning, etc. The most important thing is that we should trust each other and believe that students are still young and are more flexible and adaptive to these situations. Finally, medical education during pandemics remains controversial. Research that compares the risks and advantages of continuing hospital teaching for students versus virtual simulated teaching is needed to reach a definitive decision. 

Keywords: education, medical, pandemic, student.

Immunization for the elderly: is it necessary?

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With increasing life expectancy, the global population ages, and the number of persons older than 60 years of age is expected to double by 2050. The severity of many infections is higher in the elderly compared to younger adults and infectious diseases are frequently associated with long-term sequelae such as impairments in activities of daily living, onset of frailty, or the loss of independence. Age-associated functional changes in the immune system. Both innate and adaptive immune systems undergo age-related alterations in terms of cell numbers and functions toward the later decades of human life. Despite this functional down-regulation at the cellular level, levels of pro-inflammatory cytokines and chemokines are elevated in circulation with advancing age. We can summarize that older adults’ immune responses are slower, less coordinated, and less efficient, making older adults more susceptible to emerging infections. It is important to give vaccination to the elderly. Future vaccination strategies will need to elicit strong protective antibody responses in older adults, using age-appropriate adjuvants; anti-viral and immunomodulatory treatments are currently an area of intense study. 

Keywords: vaccine, prevention, elderly, efficacy.

Changes in decisions on chemotherapy during Covid-19 pandemic

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Delivering the optimal cancer care during the COVID-19 crisis is challenging given the competing risks of death from cancer versus infection from SARS-CoV2, and the higher risk of death in immunocompromised patients. This presentation will discuss the influence of specific cancer on disease severity, issues related to balancing the risk from delaying chemotherapy, as well as reviews of the recommendations for cancer care during the COVID-19 pandemic from several expert groups. I will also share a glimpse of the perceptions of cancer patients on the changes in hospital policies since the pandemic. 

Keywords: chemotherapy, oncology service, COVID-19, pandemic.

Ethical and legal dilemma in acquiring consent regarding handling of suspected Covid-19 body

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Background: COVID-19 death is defined as death resulting from an illness that is clinically compatible with a probable or confirmed COVID-19 case. This indicates that patients dying from probable COVID-19 or who died before reaching the hospital will be handled using the same protocol despite the lack of test result. Unfortunately, many relatives of the late refuse to giving approval for the handling of the body using COVID-19 body-handling protocol. Thus, it could rise conflict of ethical and legal obligations during clinical practice. 

Objective: This review is analyzing an actual ethical and legal dilemma faced by health care workers especially who handled suspected COVID-19 dead body.

Methods: This is an analytical literature review with narrative approach. 

Results: The ethical approach apply four quandrants analysis. The indications of handling suspected body according to COVID-19 protocol is the consideration
of public safety in regards of patient/family preferences. Religious rites according to the late belief is applied to maintain the quality of end of life care and respecting the common good of the community needs. Legal protection must be provided for hospital and healthcare workers for adhering to the safety protocol during a pandemic.

**Conclusion:** Handling of suspected COVID-19 body bear a dilematic ethical and legal responsibility. To acquire the autonomous consent of the patient must also respect the needs of public safety.

**Keywords:** body handling, consent, Covid-19, ethical dilemma, legal dilemma.

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**Genetics approach of infertility and failure of pregnancy**

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Infertility is a complex disease of the reproductive system characterized by the inability to achieve pregnancy after more than 12 months of regular, unprotected sexual intercourse. Infertility in female can be caused by anatomical (uterine, tubal and pelvic abnormalities), endocrine, genetic (chromosomal abnormalities and gene mutation), endometriosis/ immune, infectious or psychogenic factors. However the main genetic factors in human reproductive disorders are the chromosome abnormalities. A significant proportion of infertile males with azoospermia and severe oligospermia have a genetic etiology for reproductive failure. Chromosomal abnormality mainly in sex chromosome can be easily identified using light microscopes such as Klinefelter syndrome with 46,XXY and other large Y chromosome deletion or translocation to autosome. The advanced molecular genetic techniques give an opportunity to identify new genetic causes of male infertility and to understand their affects on normal testicular functions. Many genes have been identified in infertile man such as SRY gene, AZF gene, genes related to disorders of sex development (DSD) namely AR gene, SF1 gene, ANOS1 gene (Kallmann syndrome) and many more genes still in progress for identification with panel genes on NGS. Primary female infertility includes premature ovarian failure (POF), polycystic ovary syndrome (PCOS) and endometriosis, while secondary infertility arises due to systemic or syndromic genetic defects. The diagnosis of recurrent miscarriage or recurrent pregnancy loss (RPL) is not made until a woman has lost three pregnancies. The risk of RPL in each patient is probably determined by the interaction of many genetic variants and environmental factors, but only few of these have so far been identified. Genetic studies suggest that RPL due to predominantly maternal causes with multifactorial background. A considerable proportion of RPL cases are caused by recurrent chromosomally abnormal conceptions. Almost 40-50% of all miscarriage is due to genetic abnormalities in the baby. These pregnancies are terminated by nature itself as a defense mechanism against the birth of abnormal babies. Chromosomal investigation of the couple may reveal abnormalities (only in 2-3 % of couple) in any of the parent. Most chromosomal abnormalities in carrier parent are balanced translocation or inversion without any abnormal clinical phenotype. In our experiences it quite often no chromosomal abnormality can be found in RPL, this is not indicated that there is no genetic abnormality in those cases since small chromosome abnormality (<4kb) cannot be detected using light microscope. A new various DNA techniques could determine small deletion or gene mutation and resolve much-unexplained miscarriage. Therefore in the counseling session care must be taken when informing the laboratory results, the term of normal chromosome should not be mentioned. Detailed information about the cause of the disorder, the pattern of inheritance, diagnostic procedure, and how to deal with the disease should be conveyed to patients and also their families. Genetic counselors work with patients struggling to become pregnant who desire preconception genetic testing, carrier screening and prenatal diagnosis either invasive (amniocentesis or chorionic villus sampling and preimplantation genetic diagnosis) or non invasive prenatal testing (NIPT). Many couples with infertility or reproductive disorders lead to decreased fertility have turned to assisted reproductive technology (ART) which is rarely available and costly. For these reason ART patients must be informed and must undergo a complete genetic screening and extensive genetic counseling.

**Keywords:** genetic, testing, endometriosis, procedure.
Comparison of plyometrics and aerobic exercises on the memory of students of the Faculty of Medicine Universitas Diponegoro

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Background: Problems of a person’s desire to exercise is still a major highlight in the realm of health, both in Indonesia and in the world. Lack of exercise affects brain work, which is a smaller brain volume in people who are not actively exercising, so doing plyometrics and aerobic exercises can be a solution to these problems because exercise can be easily done for health and increased cognitive abilities.

Aim: To understand which exercises are more effective at improving one’s short-term memory.

Methods: This study is a quasi-experimental study with 54 subjects, all of whom are students of the Faculty of Medicine Universitas Diponegoro, aged between 15-25 years. Subjects were divided into three groups, namely the plyometrics group, the aerobic group and the control group. Subjects were selected by purposive sampling method and participated in the measurement of short-term memory at the time before exercise and after exercise for 6 weeks. Statistical analysis in this study using paired t-test and independent t-test.

Results: There was a significant difference in the short-term memory measurement results between the treatment and control groups, but a higher increase was found in the plyometrics group, with p-value <0.001.

Conclusion: Plyometrics and aerobic exercises improve short-term memory in students of the Faculty of Medicine Universitas Diponegoro. A more significant improvement was found in the plyometrics group.

Keywords: plyometrics exercise, aerobic exercise, short term memory.

Testing of emergency mechanical ventilator (beta version): tidal volume, inspiratory-expiratory ratio and respiratory rate

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Background: The condition of respiratory failure is a serious matter in the handling of COVID-19 patients. Using emergency mechanical ventilator to substitute of a chest pump will supply positive pressure on the respiratory tract and force the patient’s lungs open so that the oxygenation process will take place.

Objective: The quantitative value of the performance of an emergency mechanical ventilator is an important aspect which needs to be considered during product development of an emergency mechanical ventilator. With respect to the beta version of emergency mechanical ventilator, this research goal is observing the performance of the breath assistance which should be suitable with the amount set on the ventilator control system.

Methods: Performance testing was carried out by conducting the beta version of the emergency mechanical ventilator by collecting test data for tidal volume, inspiratory-expiratory ratio, and respiratory rate as the test limits. This method is used as a pre-test method to develop further the emergency mechanical ventilator in Universitas Diponegoro.

Result: Based on the test results, the ventilator has the suitability of tidal volume, inspiratory-expiratory ratio, and respiratory rate in the excellence category due to the specified tolerance range results

Conclusion: The test results indicate that the ventilator had a good performance level and the mechanical system works well.

Keywords: ventilator, tidal volume, pressure, inspiratory-expiratory ratio, respiratory rate.

Finite element analysis of artificial hip joint implant made from stainless steel 316L

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Background: The stainless steel 316L material is one of the widely used hip joint implant material. Even with excellent properties for hip implant, this material is likely to fail after 12-15 years of implantation because of wear and stresses. The computational analysis using the finite element method can be used to analyze the stress in the hip joint implant.

Objective: The stresses and safety factors analysis of the hip joint implant using the four different types of stainless steel 316L materials from several manufacturers are highlighted as the objective of this study.

Methods: There are four different types of stainless steel 316L materials used in this study which are manufactured with different methods. These materials
are simulated into Universitas Diponegoro artificial hip joint design. The ASTM F2996-13 and ISO 7206-4 are considered as the standard references in this simulation for loading and boundary condition application.

**Results:** Based on the static structural analysis, the total deformation; equivalent elastic strain, equivalent von-Mises stress, and the safety factor is obtained from the UNDIP hip joint implant. Based on the simulation results, The lowest grade material of stainless steel 316L still allowable and considerable to be one of the artificial hip joint.

**Conclusion:** The analysis concludes that the four types of stainless steel materials are safe to be used for UNDIP hip joint implants which have >1 safety factor. The highest safety factor is resulted from the forging material which also followed by the highest the manufacturing cost.

**Keywords:** Stainless steel 316L, Safety factor, Hip joint implant, Finite element method, Stress

The effects of threshold inspiratory muscle training on the duration of use of mechanical ventilation

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**Background:** Inspiratory muscle strength was an important determinant of functional capacity early after cardiac surgery. The maintenance of adequate preoperative inspiratory muscle strength suggesting that increase lung function, ventilation efficiency and perfusion of the respiratory.

**Objective:** To study the effects of Threshold Inspiratory Muscle Training (TIMT) on the duration of mechanical ventilation in post-op heart valve surgery patients.

**Method:** An experimental comparative study was conducted at a Dr. Kariadi General Hospital, Central Java with a total of 26 patients with valve heart disease were randomly allotted into two groups. The first group was given conventional pre-operation routine training and the second group was given TIMT. The intervention period was two weeks. We prospectively analyzed the duration of use of mechanical ventilation using medical record data.

**Result:** The groups were analyzed by using Mann Whitney test. Patients in the treatment group had a shorter time to use a mechanical ventilation than the control group, TIMT group was 13.78±6.94 hours, while the control group, TIMT. The intervention period was two weeks. We prospectively analyzed the duration of use of mechanical ventilation using medical record data.

**Conclusion:** Two weeks intensive preoperative inspiratory muscle training showed that the length of time on the mechanical ventilation use in the intervention group was shorter than the control group although it was not statistically significant.

**Keywords:** cardiac surgery; duration of mechanical ventilation; inspiratory muscle training.

Personalizing mobile health apps using reinforcement learning to increase physical activity and academic achievement among nursing students

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**Background:** A vital step to enhance the academic efficiency of students is increasing their physical activity. For this reason, it is necessary to see to what extent physical activity by health-app is related to the academic performance of the students and what might mediate this.

**Purpose:** This study examined the effectiveness of health-monitor-app, which implements important behaviour and knowledge-change features like dynamic goal setting and self-monitoring to promote physical activity, improve academic performance and overall health among nursing students.

**Methods:** A non-equivalent control group with pre and post-test design included 96 nursing students with physical inactive by sample power to estimate, and recruit from the university office affair and student union. At baseline, after giving informed consent, participants randomly assigned to intervention group or control group. The intervention group was received education session and Mobile Student Activity Reinforcement during 12-week, and control group received standard care. Physical activity was measured using the health-app. Academic performance had been measured as the grade point average (GPA) of the semesters. Anthropometrics includes height, weight, waist circumference and body composition, and self-efficacy were assessed through extensive questionnaires. Data were analyzed within and between intervention and control groups to assess long-term effects using t-tests, ANOVAs and linear regression.

**Result:** The final sample included a total of 96 participants (46 female, 50 male) and the mean ages in intervention group was 26.16 (SD= 3.71) and the control group (M = 25.46; SD= 4.46). Attrition was low (n=3), and was solely attributed to app or mobile phone malfunctions. The intervention group participants recorded more steps/week (p<0.001, eta = 0.60), greater distances walked (p<0.001, eta = 0.54), greater achieve 10000 steps (p<0.001, eta = 0.54), higher sit and reach test scores (p<0.001, eta = 0.17), lower systolic blood pressure (p<0.005, eta = 0.08), lower diastolic blood pressure (p<0.001, eta = 0.12), and lower waist circumference (p<0.001, eta = 0.43) than the control group participants. For the SCT elements, significant main effects of the intervention were found on self-efficacy (p=0.023, eta=0.06), social support (p=0.042, eta = 0.25), outcome expectancy (p=0.023, eta=0.06), with participants in the intervention group reporting higher self-efficacy, social support and outcome expectancy than those in the control group.

**Conclusion:** Personalizing Mobile Health Apps using Reinforcement Learning as a good model for school health professionals to design an effective program or provide related service for nursing students to promote their healthy behaviours and academic perform

**Keywords:** physical activity, academic performance, students.
Relationship between IL-6, IL-1β and Vitamin D on frailty status in elderly women

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Background: The aging process is associated with an increase in serum levels of pro-inflammatory markers, indicating that a chronic inflammatory process is correlated with an increase in disability, mortality, and frailty. Proinflammatory cytokines that increase with the incidence of frailty syndrome are IL-6, IL-1β and TNF-α. 25-hydroxyvitamin D (25 (OH) D) deficiency is also a potential risk factor for frailty, especially in the elderly. Vitamin D deficiency is associated with a risk of falling, which can speed up the frailty process.

Objective: To determine the relationship between IL-6, IL-1β and Vitamin D on frailty status in elderly women in elderly integrated health service (posyandu lansia), Semarang City.

Methods: This study used a cross sectional design with a consecutive sampling method of 27 subjects. Subjects measured vital signs, weight and height measurements. The subjects of the study were then taken venous blood to measure the levels of IL-6, IL-1β and vitamin D in blood serum and assessed their frailty status. Data analysis using SPSS 25 with Spearman correlation test.

Results: There were 27 elderly women who followed this study with an average age of 67.93 years. There are 16 people with pre-frail status and 3 people with frail status. There is a significant relationship between vitamin D levels in serum and frailty status (p=0.095; r=0.497). Variables IL-6 (p=0.328) and IL-1β (p=0.095) had no significant relationship with frailty status.

Conclusion: Most of the elderly women have a pre-frail status, namely as much as 59.3%. Vitamin D levels in the body have a significant and unidirectional relationship with frailty status in elderly women.

Keywords: vitamin d, proinflammatory cytokines, elderly, frailty.

Factors related to the level of prisoner’s participation (WBP) in implementing the voluntary counseling and testing (LBP) program in lapas

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Introduction: Voluntary counseling and testing (VCT) are one of HIV screening programs to detect HIV infection earlier by counselors before and after doing blood test. During implementation of this program, there were various factors influenced prisoners to do VCT.

Aim: The purpose of this research to determine factors influenced the participation of prisoners to do VCT.

Method: This research was an analytical research with cross sectional design.

Result: A total of 145 respondents have filled questionnaire distributed by researcher. The research showed that 73 respondents (50.3%) had followed VCT and 72 respondents (49.7%) did not do VCT. Factors related prisoner’s participation towards VCT program were education level, perception of needs about VCT service, prison support, health workers support, support by family and people around them. The result showed that there are two types of support related with prisoner’s participation: prison’s support which is among 104 respondents (71.7%) who have high support, 62 respondents (42.8%) have followed VCT with p<0.001. According to health workers support, 114 respondents (78.6%) who have high support, there are 64 respondents (44.1%) have followed VCT with p-value = 0.007.

Conclusion: The counsellor’s ability must be improved in order to perform good VCT and also the prison was expected to give more information about HIV/ AIDS and VCT program to increase prisoner’s knowledge to follow VCT.

Keywords: prisoner, prison, voluntary counseling and testing.

Analysis of implementation of code blue service towards the making of an early warning system in the Universitas Sumatera Utara Hospital

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Introduction: Universitas Sumatera Utara Hospital (USU Hospital) since its operation in 2016 has carried out Medical Services for patients with cardiac arrest conditions by forming a code blue team. Data for 2018 the number of Code Blue patients 240 patients. There are still many cardiac arrest events at USU Hospital, it is necessary to evaluate the implementation of the Code Blue service and create an early warning system for patients with the potential for cardiac arrest to prevent high cardiac arrest cases that will economically harm USU Hospital.

Method: Retrospective analysis from the medical record, an interview with the code blue team, and an analysis of the resuscitation form that has been completed. An evaluation in early warning system and code blue service comparation were evaluated.

Result: The results of the study (n=30) which experienced the most stopping breathing and cardiac arrest before the implementation of early warning system (EWS) were chronic diseases of 63.3% (n = 19) and after the implementation of EWS there were still chronic diseases of 56.7% (n = 17). There was no significant difference in age range of 61-70 years with the numbers respectively 36.7% (n = 11) and 33.3% (n = 10). Based on sex, data obtained before EWS services were 56.7% (n = 17) and after EWS was 16 (53.3%). Paired t-test was
conducted to see the impact of EWS services on the implementation of Code Blue, the results obtained: Code Blue service on the numeric response time parameter there was a difference in response time of 0.266 minutes after the implementation of EWS services (p=0.354). Meanwhile related to the length of time for cardio-pulmonary resuscitation (CPR) there is a time difference of 10,767 minutes after the implementation of EWS services, (p=0.000). Interpretation of EWS implementation can influence the length of time the CPR is performed because the worsening condition of the patient has been monitored before breathing and cardiac arrest occur. Code blue services can be shorter in terms of implementation time because the occurrence of stopping breathing and cardiac arrest in patients who have been monitored by the EWS form is an emergency condition that can no longer be provided with basic life assistance and advanced rescue protocols.

**Conclusion:** The conclusion of making an early warning system (EWS) at USU Hospital can be immediately implemented as stated in the guidelines as a form of service in medical and nursing services.

**Keywords:** code blue, resuscitation, early warning system.

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**2. DENTISTRY**

**The comparison of oral health status between psychotic and non psychotic mental disorders patients**

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**Background:** Psychotic mental disorder characterized by psychotic symptoms such as delusions and hallucinations, while non-psychotic mental disorder has no severe impairment to recognize reality. Both of these mental disorders are predicted to have differences in oral health, proved by oral health status assessments.

**Aim:** To know the comparison of oral health status between psychotic and non psychotic mental disorders patients.

**Method:** Cross-sectional study of 40 respondents and age criteria of 18 – 55 years old, patients with orthodontic appliances or diabetes mellitus were not included. DMF-T Index and OHI-S examinations were used as oral health status assessments. The statistical test was using the Mann-Whitney test, all value considered significant if p<0.05.

**Result:** Psychotic mental disorder patients had higher median values (6.72; 2.16), compared to non psychotic mental disorder patients (3.00; 1.00) based on DMF-T Index (p=0.016) and OHI-S (p<0.001).

**Conclusion:** Psychotic mental disorder patients had worse oral health than non psychotic mental disorder patient based on DMF-T Index and OHI-S.

**Keywords:** Mental disorders, psychotic, oral health status.
3. MEDIC REHABILITATION

The effect of the addition of inspiratory muscle training threshold on forced expiratory volume 1 (FEV1) and forced vital capacity (FVC) in chronic obstructive pulmonary disease

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**Background:** Pulmonary rehabilitation programs in people with chronic obstructive pulmonary disease (COPD) are performed to reduce symptoms of shortness of breath and increase the strength of respiratory muscles. Pursed lip breathing (PLB) is a breathing exercise strategy to reduce shortness of breath but this training does not significantly increase breathing muscle strength so additional inspiratory muscle training (IMT). The IMT as an exercise that puts pressure on inspiring muscles to strengthen the breathing muscles can increase forced expiratory volume 1 (FEV1) and forced vital capacity (FVC) in people with COPD.

**Objective:** To prove the effect of the addition of IMT threshold on FEV1 and FVC for COPD patients who receive PLB training.

**Method:** This study is a true experimental randomized pre and post-test design. Samples were 20 COPD patients treated at the pulmonary clinic at Tugurejo Hospital, divided into 2 groups randomly. The control group (n=10) and the experimental group (n=10) each performed PLB exercises, 2 sessions a day, each session lasted 2 minutes, conducted 5 days a week, for 6 weeks. In the experimental group got additional IMT threshold exercises 2 sessions a day, each session lasts 15 minutes, conducted 5 days a week, for 6 weeks, FEV1 and FVC were measured before and after intervention.

**Results:** The differences of FEV1 and FVC between the experimental and control groups showed a significant difference (p<0.005).

**Conclusion:** The addition of IMT threshold exercise increases FEV1 and FVC with COPD patients who receive PLB training.

**Keywords:** COPD, FEV1, FVC, IMT threshold, pursed-lip breathing.

Differences in the effectiveness between core exercises with swiss ball and resistance bands on trunk flexibility in obese adolescents

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**Background:** Obesity in adolescents has increased in the last 3 decades. Obesity in adolescents is a risk factor for musculoskeletal problems such as decreasing trunk flexibility and can increase the risk of injury, muscle pain, and affect the physical activity of the adolescent. Core exercises are widely adopted by rehabilitation programs to increase flexibility. The use of Swiss ball and Resistance Band in core exercise is believed to have many benefits in trunk stability and flexibility. However, the differences in effect between core exercise with Swiss ball and Resistance Band on trunk flexibility remains unknown.

**Objective:** To compare the effect of core Exercise with Swiss ball and Resistance bands on trunk flexibility in obese adolescents.

**Methods:** This study was a randomized controlled trial with pre-test and post-test control group design. Group 1 (n=18) was given core exercise using a Swiss ball, group 2 (n=18) was given core exercise using Resistance bands, training 3 times a week for 6 weeks. Prior to and after the 6-week Training, Modified Back Saver and Reach test scores (MBSR) were compared.

**Results:** There was no significantly difference in the MBSR test score pre and post 6 weeks training between the Swiss ball group and the Resistance band group (p=0.79). The MBSR test score in both groups increased but it was not statistically significant. After 6 weeks, MBSR test score of Group 1 that was given Swiss ball exercise showed no improvement (p=0.389), while Group 2 that was given resistance band exercise showed no improvement (p=0.490).

**Conclusion:** Core Exercise with Swiss Ball is the same effective as (BMSR)on trunk flexibility in obese adolescents

**Keywords:** obesity, trunk flexibility, swissball, resistance band.

The effectiveness of core exercise with swiss ball and resistance band on reducing abdominal girth and abdominal skinfold thickness in obese adolescents

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**Introduction:** Obesity is characterized by excess fat or adipose tissue in the body. Excess intra-abdominal fat carries a more significant health risk to hypertension, cardiovascular, musculoskeletal problems, and psychosocial impacts. The prevalence of obesity in children and adolescents in the world has increased in these three last decades. Therefore it is essential to reduce body mass index (BMI), especially abdominal girth and abdominal skinfold thickness. Various core exercises have been designed in the rehabilitation program to decrease obesity. Core training methods widely used include Swissball and Resistance band. However, no studies confirm the effect of core exercise and the comparison between the effectiveness of the two exercises on reducing abdominal girth and abdominal skinfold thickness.

**Objective:** To compare the effectiveness of core exercise with Swiss Ball and Resistance band on abdominal girth and skinfold thickness in obese adolescents.

**Method:** This study was a randomized controlled trial pre-test and post-test controlled group design. Participants were allocated into two groups, where...
ABSTRACT

The effect of prehabilitation strengthening exercise compared with conventional therapy on walking distance in patient with knee osteoarthritis undergoing total knee replacement

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Background: It is estimated that almost half of all adults will experience symptomatic knee Osteoarthritis (OA) during their lifetime. Although total knee arthroplasty (TKA) performed with modern surgical techniques and standard rehabilitation protocols has shown good functional results for most patients, 15-20% of patients still show functional limitations. Prehabilitation exercise is done to increase the strength of quadriceps and functional abilities before surgery so that patients will have better functional abilities after TKA.

Objective: To assess the effect of prehabilitation strengthening exercise on walking distance in patient with knee osteoarthritis undergoing total knee replacement compared with conventional therapy

Method: This study was a randomized controlled trial. Participants were allocated to the prehabilitation group (n=8) who received prehabilitation exercise and the conventional group (n=8) who only received range of motion (ROM) exercise and TENS (Transcutaneous Electrical Nerve Stimulation) 2 times a week before surgery. Postoperatively, both groups underwent a similar rehabilitation program protocol for 8 weeks. 2MWT was assessed 4 weeks before surgery (T1), 1 week before surgery (T2), and 8 weeks after surgery (T3). Results: The mean score of 2MWT in the prehabilitation group was significantly greater than in the conventional group at 1 week before surgery (p=0.003) and 8 weeks after surgery (p=0.004)

Conclusion: Prehabilitation exercise interventions with resistance bands may improve functional performance in knee OA patients undergoing TKA

Keywords: knee osteoarthritis; prehabilitation exercise; total knee arthroplasty; two minute walking test.

4. PSYCHIATRY

Correlation between depression with risk of suicide in senior high school adolescents at Purwodadi, Grobogan, Indonesia

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Background: Based on WHO data in 2017, Indonesian adolescents aged 13-17 years old as many as 3.9% have attempted suicide at least once in the past year. Suicide was the second cause of death on a lifespan of 15-29 years. The main cause of suicides is depression, so depression is the target of WHO’s 2013-2020 mental health action plan. In Grobogan Regency, Purwodadi, Central Java, Indonesia there has been an increase in the number of suicides in the last 5 years. Purwodadi Sub-District is in third place with the highest number of suicides in old age. It is different from WHO data that the number of suicides in the country is at a young age.

Objective: To determine the correlation between depression and the risk of suicide.

Method: This research is a quantitative study with cross sectional design in which all respondents are observed and measured variables at one time. Samples are students of senior high school (SMAN 1) Purwodadi, Grobogan District who meet the inclusion and exclusion criteria. The sample selection was conducted using the simple random sampling method. Research instruments using the Indonesian version of the CDI (Child Depression Inventory) and CSSRS (Columbia-Suicide Severity Rating Scale) questionnaire.

Results: The prevalence of depression in adolescents at SMAN 1 Purwodadi was 34.1% with a low risk of suicide. Most of the risk of suicide in adolescents is not at risk. There is a correlation between negative mood domains and self-risk in adolescents (p <0.001).

Conclusion: No direct correlation between depression and suicide risk in high school adolescents, but there was a correlation between the negative mood domain and suicide risk.

Keywords: adolescent depression, suicide risk, CDI, CSSRS.

Correlation between level of depression and risk of suicide in elderly at Purwodadi, Grobogan, Indonesia

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Background: According to WHO, the elderly people have physical and mental challenges, including depression. The incidence of depression lead to suicide.
The role of psychosocial stressors, carbohydrate and protein intake on serum serotonin and cortisol levels in patients with depression: a preliminary evaluation

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Background: Depression is a mental disorder associated with biological, environmental and psychological factors. Depression is estimated to be a disease that requires the second largest expense on treatment. Chronic stress will reduce serotonin activity and storage and also stimulate the adrenal cortex to release cortisol and other glucocorticoid hormones. Nutritional intake such as carbohydrate and protein also play a role in the occurrence of depression with various mechanisms.

Objectives: To investigate the correlation between psychosocial stressors, carbohydrate and protein intake with serum cortisol and serotonin levels in patients with depression.

Methods: The study used an analytic observational approach with a cross sectional design. Subjects were selected by consecutive sampling and were asked to fill out the general characteristics questionnaire, BDI-II to determine depression levels, Holmes Rahe scale to measure psychosocial stressors, food frequency questionnaires to measure carbohydrate and protein intake. Subjects who met the inclusion criteria were taken blood samples to measure the cortisol and serotonin levels.

Results: The 79 subjects, 57 (72%) women and 22 (28%) men with an average age of 43 ± 3 years. A total of 64 (81%) subjects were with mild psychosocial stressors and 5 (6%) were severe. Stressor psychosocial were not significantly correlated with either serotonin (p=0.479), nor cortisol level (p=0.625) Carbohydrate were not significantly correlated with serotonin level (p=0.628) and cortisol level (p=0.252). Protein were not significantly correlated with serotonin level (p=0.688) and cortisol level (p=0.110).

Conclusion: There were no correlation between psychosocial stressors, carbohydrate and protein intake with serum cortisol and serotonin levels in depressed patients.

Keywords: carbohydrate, cortisol, depression, protein, psychosocial stressors, serotonin.

The correlation between occupational stress and depression: case report

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Results: Total 53 subjects were enrolled in this study, there was significant correlation between zinc intake with serotonin level (p=0.038), however there was no correlation between zinc intake with cortisol serum level (p=0.845).

Conclusion: The higher zinc intake the higher serotonin serum level, however there was no correlation between zinc intake with cortisol serum level in patients with depression.

Keywords: zinc intake, serotonin, cortisol, depression, FFQ

Zinc intake is associated with serotonin but not with cortisol in patient with depression

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Background: Low zinc levels affects the relationship between the glutamatergic and serotonergic systems in major depressive disorders that cause stress and inflammation. Decreased zinc in the hippocampus can activates the HPA axis associated with an increase in cortisol. Several studies documented the relationship between zinc and clinical depression, however further research including biological measurements is needed to support these studies.

Objective: To observe the correlation between zinc intake with serotonin and cortisol serum in patient with depression.

Method: This was an observational study with cross sectional design. Subjects were patients with depression who came to Dr. Kariadi Hospital, Tugurejo National Hospital, National Diponegoro and Permata Medika Hospital, who met the inclusion and exclusion criteria. The food frequency questionnaires were used to assess daily zinc intake. The levels of serotonin and cortisol serum were measured using ELISA technique.

Results: Total 53 subjects were enrolled in this study, there was no correlation between zinc intake with serotonin but 

Conclusion: significant correlation was found between severe depression and low risk of suicide.

Keywords: elderly, level depression, suicide risk, GDS, CSSRS.

ABSTRACT

elderly is about 12.7%. In Grobogan Regency, Purwodadi, Central Java, there has been an increase of depression in the last 5 years. Purwodadi Subdistrict depends on the number of orders with the highest number of traffic cases and the elderly.

Objective: To determine the correlation between depression level and the risk of suicide.

Methods: This research is a quantitative study with cross sectional design in which all respondents were observed and variables were measured at one time. Samples were taken from elderly outpatient of primary health care and elderly integrated health care service (Posyandu lansia) at Purwodadi, who met the inclusion and exclusion criteria. Research samples were selected based on non-probability sampling method through purposive sampling. This research used the Indonesian version of the GDS (Geriatric Depression Scale) and CSSRS (Columbia Suicide Severity Rating Scale) questionnaire.

Results: The prevalence of elderly depression is 63.3%, and a significant correlation was found between severe depression and low risk of suicide (p<0.05)

Conclusion: significant correlation was found between severe depression and low risk of suicide.

Keywords: elderly, level depression, suicide risk, GDS, CSSRS.
**ABSTRACT**

**Background:** Occupational stress is the worker's response when facing work demands and pressures that do not match with their resources, needs, abilities and knowledge, and overcome their ability to manage.\(^1\) According to recent studies, occupational stress accounts for 50-60% of all the lost working days.\(^2\) Occupational stress can contribute to depression. Depression has become one of the most common medical problems worldwide. In workplaces, depression has an important influence on the quality of life of workers and can result in direct economic costs by reducing productivity, because depressive symptoms have an impact on their decision-making and ability to get along with others.

**Objective:** This case report aims to understand the correlation between occupational stress and depression.

**Method:** Literature searching procedure to answer the clinical problem is to browse it online using Pubmed, Biomed Central, and Elsevier searching instrument. The keywords are the combination of Occupational stress AND Depression. The literature is limited to the last 5 years of publication and human as the subject.

**Discussion:** The journal browsing found that acute work-related stressful experiences and enduring structural occupational factors can contribute to depression. The Demand-Control Model by Karasek, encompassing the psychological demands and control dimensions. According to the model, especially "high strain" has been suspected to cause mental strain, and if prolonged, constitute a health risk like depression.

**Conclusion:** Occupational stress can cause depression. "High Strain" kind of job is the most susceptible to depression

**Keywords:** occupational stress, depression.

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**Mentalization based psychotherapy practices in patients with borderline personality disorder**

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**Introduction:** Mentalization based psychotherapy develops with the importance of establishing attachment relations with patients. MBT focuses on internal mental processes that occur in the therapeutic process that actively improve patient-therapist relationships.

**Methods:** A woman with preoccupied/anxious attachment is given mentalization-based psychotherapy. The goal of psychotherapy based on mentalization is to develop secure attachment relationships in therapy, use empathy and validation in reciprocal relationships, strengthen the patient's capacity to reduce emotional dysregulation and impulsive behavior, increase self-awareness, control of attention and flexible thinking in the context of emotions and relationships.

**Results:** Patient has begun to form a secure base attachment. Patient's mentalization has improved along with the formation of secure base attachments, patients are better able to do self-soothing and regulate emotions properly.

**Discussion:** In the early years of life, patients have a pattern of interaction with caregivers who lack the need for mirroring. Furthermore, the patient develops into an insecure self and has an inherent preoccupied/anxious attachment. It has an effect representation and attention regulation system that is not functioning, so that patients use existing stimuli as the basis of insecure sense of self. Fonagy termed this condition with incoherent, disruptive “alien self” through controlling and manipulative behavior. The patient externalizes the alien self against the attachment figure.

**Conclusion:** This externalization appears as a counter transference experience in a therapy session, if it can be managed properly it will emerge a feeling of coherence in the patient's internal world.

**Keywords:** attachment, mentalization, psychodynamic, psychotherapy, reflective function.

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**Screening of mental problems and counseling training for primary health care staffs to assess sintren dancer in Pemalang, Central Java, Indonesia**

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**Introduction:** Experiences of trance in Sintren dancer with a history of psychosocial problems, it is possible that a comorbidity of mental disorders will appear. One of the programs at the Primary Health Care is dealing with mental disorders, by providing counseling training to Primary Health Care Staffs, it is hoped that there will be guidance and assistance from the Primary Health Care for the Sintren dancer community.

**Method:** Screening is carried out to recruit synthetic dancers who have psychological problems and are given counseling. This service involves Primary Health Care Staffs. This service includes not only networking and treatment but also providing counseling to Sintren dancers to deal with the problems they are experiencing.

**Result:** Sintren dancers met the category of mental disorders (dysthymia and post-traumatic stress disorder). Primary Health Care Staffs had bad experience in helping people with mental disorders, they are afraid of helping people with mental problems. With counseling training, primary health care staff more confident to help people with mental problems.

**Conclusion:** Sintren dancers have a psychosocial and mental disorder background. Counseling training in Primary Health Care Staffs provides understanding of stress management and early detection of mental disorders that often occur in society.

**Keywords:** Sintren, counseling, primary health care, mental problems.
Myasthenia gravis and arrhythmia in COVID-19: a case report

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Background: Myasthenia Gravis (MG) is an autoimmune disorder associated with T cells and B cell-mediated. Thymus abnormalities are often found in MG patients. About 10% of MG patients are associated with thymoma. MG patients have a higher prevalence of cardiac manifestations in the presence of thymoma. Coronavirus disease 2019 (COVID-19) is rapidly becoming a global pandemic. It is not known whether COVID-19 can cause more severe illness in patients with chronic neuromuscular disorders such as MG, which can cause respiratory muscle weakness, or in those who are immunosuppressed.

Case report: A 60-year-old man came to the hospital complaining of difficulty swallowing. Speech sounds nasal especially after talking a lot, drooping eyelids, there is weakness of all four limbs, which gets worse at night and gets better the next morning. This complaint was felt repeatedly. From the physical examination, it was obtained Wartenberg (+), counting test (+), prostigmine test (+). The patient underwent an EMG examination and the results found a decrement of more than 10% on 20 Hz M. Orbic Oculi stimulation, which was consistent with the MG image. On the EKG, normal ventricular response atrial fibrillation was found. On Echocardiography examination, the LV systolic function decreased with an LVEF of 48%. An MSCT thoracic scan revealed a homogeneous solid mass in the form of a lobulated anterior mediastinum which supports the image of the thymoma; and there was a subpleural infiltrate of segment 3, 6 of the right lung, a subpleural infiltrate of 6 segments of the left lung and a groundglass of subpleural opacity of a segment of 1/2, 3 of the left lung which corresponds to a typical reactive viral pneumonia. Then the patient underwent a naso/oropharyngeal swab examination for COVID-19 and the result was positive.

Conclusion: MG patients have been shown to have manifestations of abnormal heart rate and rhythm. This may reflect a complication of myocarditis or alternatively, a malfunctioning of the autonomic nervous system. Both of these mechanisms appear to be more common in myasthenic patients with thymoma. COVID-19 infection in MG can be challenging for many reasons. Current guidelines recommend continuing the current standard care treatment of MG during hospitalization.

Keywords: myasthenia gravis, arrhythmias, covid – 19.
ABSTRACT

Background: COVID-19 is a global pandemic caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). COVID-19 is known to increase the risk of ischemic stroke due to COVID-19 associated coagulation (CAC) and the neurotropism of SARS-CoV-2. This case series will discuss about the patients with ischemic stroke and COVID-19 infection.

Case presentation: First, a woman-74 years old with motor aphasia, facial nerve and central left hypoglossal nerve paresis, and spastic left hemiparesis with positive SARS-CoV-2 PCR test. The laboratory showed an increase in coagulation factors (D-dimer and fibrinogen). The patient showed deterioration in respiratory function during treatment, and dead. Second, male-67 years old with decreased consciousness and bilateral spastic hemiparesis with positive SARS-CoV-2 PCR test. Head MSCT showed lacunar infarction on the posterior crus of the left internal capsule. The patient’s condition improves during treatment.

Conclusion: Ischemic stroke can occur in patients with COVID-19, especially in severe conditions with coagulation disorders characterized by increased levels of D-dimers and fibrinogen as a result of the inflammatory process caused by COVID-19.

Keywords: COVID-19, infarction stroke, ischemic stroke, SARS-CoV-2.

Recombinant tissue plasminogen activator (rTPA) in young adult patient with acute ischemic stroke: a case report

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Background: Stroke is one of the highest causes of morbidity and mortality in the world. The incidence rate of ischemic stroke is about 80% of all stroke incidents. The use of recombinant tissue plasminogen activator (rTPA) is recommended under 4.5 hours of stroke onset. Stroke in young adults are reported as being uncommon, compromising 10% - 15% of all stroke patients. Many studies were reported the most common risk factor in young adults was obesity and dyslipidemia. This case report will discuss a 33-year-old men with ischemic stroke with obesity and dyslipidemia treated at dr. Kariadi Hospital Semarang.

Case presentation: A 33-year old obese man with left-sided hemiparesis and central facial nerve palsy with an onset of 1 hour. On laboratory examination, it was obtained total cholesterol 179mg/dL, LDL level 123mg/dL, and HDL level 39mg/dL. The protocol code stroke was performed in emergency room with alteplase (r-TPA) 0.6 mg/kgBW, after his head MSCT shows there was no sign of blood in the brain parenchym.

Conclusion: According to clinical characteristic, radiographic finding and histopathological features consistent with central neurocytoma of the lateral ventricle. Surgery as the treatment of choice following by radiation can improve clinical outcome.

Keywords: central neurocytoma, neuroepithelial tumor, radiotherapy

The Relationship between brain gym and changes in interleukin 6 levels and cognitive function in the elderly

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Background: The prevalence of cognitive impairment increased by 10%, doubling every 20 years. Brain gym is one of the non-pharmacological cognitive stimulus therapies that are effective in increasing brain neuroplasticity and are easy to do. The Interleukin 6 biomarker is a proinflammatory pleiotropic cytokine blood marker sensitive to cognitive impairment.

Objective: Analyzing the relationship between brain gym and changes in interleukin 6 levels and cognitive function in the elderly.

Treatment outcome of central neurocytoma: a case report

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Introduction: Central neurocytoma (CN) is a rare and benign neuroepithelial tumor. CN often located in lateral ventricle and may cause obstructive hydrocephalus. Surgery followed by radiation can improve patients survival and prognosis.

Case report: 30-year-old woman presented with severe headache and vomiting. MRI showed a heterogenous mass in right lateral ventricle causing obstructive hydrocephalus. The patient underwent partial resection. Central neurocytoma confirmed from histopathological analysis. Afterward patient received 54 Gy conventional radiotherapy. Three months after radiation patient remain asymptomatic, no neurological deficits. MRI evaluation showed slightly tumor mass reduction (from 4.09 x 3.01 x 4.13 cm before radiation to 4.00 x 3.86 x 3.63 cm after radiation)

Conclusion: According to clinical characteristic, radiographic finding and histopathological features consistent with central neurocytoma of the lateral ventricle. Surgery as the treatment of choice following by radiation can improve clinical outcome.

Keywords: central neurocytoma, neuroepithelial tumor, radiotherapy
Methods: This research is a quasi-experimental observational study with a pre and post test approach without control. Subjects were the elderly who were in the Tresna Werdha Social Home, Semarang. Comparative hypothesis test between categorical and numeric scale variables, normal data distribution is done by Independent T-test.

Results: In this study, 33 subjects with a mean age were 70.06 ± 6.43 years and the dominant sex was male. There was a significant difference between interleukin 6 levels pre and post brain gym (p<0.001). There was a significant difference between the Moca-Ina values pre and post brain gym (p<0.001).

Conclusion: Interleukin 6 levels decreased after brain exercise compared to before, the Moca-Ina value increased after brain exercise compared to before brain gym. Brain gym is safe, easy to do and effective as a non-pharmaco-therapeutic treatment of neuropsychology in cognitive impairment.

Keywords: brain gym, interleukin 6, moca ina. cognitive function, neuroplasticity.

The difference in the prevalence of periodontitis degrees between ischemic stroke with diabetes mellitus and ischemic stroke with prediabetes mellitus

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Background: Stroke is a cerebrovascular disease caused by atherosclerosis. Oral health and atherosclerosis may be associated with cerebrovascular disease. Some studies proved the association between chronic infectious diseases, including periodontal disease with stroke risk factor. Diabetes Mellitus has a risk of microvascular complications that are pathologically related to periodontal disease.

Objective: To compare the degree of periodontitis between ischemic stroke with diabetes mellitus and ischemic stroke with prediabetes mellitus.

Methods: This study is an observational analytic study with a cross-sectional design. Study subjects were infarct stroke patients with diabetes mellitus and prediabetes mellitus in the inpatient ward of Kariadi Hospital Semarang, who met the inclusion and exclusion criteria. The study was conducted from January to March 2020. Infarct stroke was assessed using head CT scan, diabetes Mellitus using blood glucose, 2 hours post prandial blood glucose, and HbA1c, while periodontal disease using MMI (Miller’s Mobility Index). The data were analyzed with chi-square correlation test and logistic regression test. The results were significant if p<0.05.

Results: This study was conducted to 42 patients with ischemic stroke with diabetes mellitus and prediabetes mellitus. All of the cases also had hypertension. The prevalence of severe periodontitis in DM-hypertension was (OR=0.66 95% CI=0.12-0.354) compared to prediabetes-hypertension. Chances of severe periodontitis in age 61-70 years (OR=2.626 95% CI=0.473-14.587) compared to age 51-60 years, dyslipidemia (OR=0.392 95% CI=0.076-2.016) compared to non dyslipidemia, obesity (OR=2.346 95% CI=0.382-14.428) compared to non obesity, smoking (OR=1.768 95% CI=0.371-8.425) compared to non smokers.

Conclusion: All cases of diabetes mellitus and prediabetes mellitus in this study were accompanied by hypertension. The prevalence of severe periodontitis in prediabetes-hypertension patients increased compared to hypertensive-DM patients. There was an increased possibility of severe periodontitis in the risk factors groups of age 61-70 years, obesity, and smoking.

Keywords: diabetes mellitus, ischemic stroke, periodontitis, prediabetes mellitus.

The role of MMP-9 rs 3918242 genetic variant in correlation of MMP-9 serum level in risk factor atherosclerosis of acute stroke infarct

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Background: Increased serum MMP-9 levels are known to be biomarkers of atherosclerotic events and risk of cerebrovascular disease. Risk factors for acute ischemic stroke are known to be related to serum MMP-9 levels. The genetic variant of MMP-9 rs3918242 is known to have a role in serum MMP-9 levels.1,2

Objective: The study aim is to determine the role of MMP-9 rs 3918242 genetic variant in correlation between MMP-9 serum levels and risk factors in acute ischemic stroke.

Methods: A cross sectional study with an observational analytic approach of 62 subjects of acute ischemic stroke treated at Dr. Kariadi Hospital Semarang in October 2018 to February 2019. Statistical analysis was assessed by the bivariate test and followed by a logistic regression test.

Results: From 62 study subjects, 45 (72.6%) subjects had high serum MMP-9 levels. In statistical tests the relationship of serum MMP-9 levels with risk factors for acute ischemic stroke p value was found to be significant p<0.05 in hypertension, diabetes mellitus, dyslipidemia, obesity, hyperuricemia. There is a positive correlation of serum MMP-9 levels with a number of acute ischemic stroke factors. In multivariate analysis, it was found that the most influential variables were obesity and hyperuricemia. CC Genetic Variant has a role in the relationship of serum MMP-9 levels with risk factors for ischemic stroke, which is hypertension, diabetes mellitus, dyslipidemia, obesity, hyperuricemia. While CT genetic variants play a role in the relationship of serum MMP-9 levels with risk factors for ischemic stroke, namely obesity and hyperuricemia.
Conclusion: CC genetic variants with high serum MMP-9 levels have an association with more ischemic stroke risk factors than CT genetic variants with high MMP-9 serum levels so that later CC genetic variants appear to be more at risk of stroke infarction.

Keywords: Genetic Variant, MMP-9, stroke, infarction.

The association between tension type headache (TTH) and the severity of insomnia

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Background: Sleep can reduce headaches, but on the other hand, sleep disturbances can provoke the onset of headaches. Research showed that sleep quality was a complex interaction of people with Tension Type Headache (TTH), due to depression and emotional burden with sleep quality

Objective: To determine the association between the type of tension type headache and the severity of insomnia.

Methods: This was a cross sectional observational study. The subjects were tension type headache patients who went to the neurological clinic of Dr. Kariadi Hospital and Puskesmas (Primary Healthcare Facility) Pandanaran Semarang who met the inclusion and exclusion criteria. It was conducted from February to July 2020. Insomnia examination was carried out using the ISI questionnaire. Data were analyzed using chi-square significant test. The result was considered significant if the p<0.05.

Results: From 29 TTH patients, 5 (17.2%) subjects experienced rare ETTH, 18 (62.1%) had frequent episodic TTH (ETTH), 6 (20.7%) had chronic (CTTH), and 2 (6.9%) subjects with depression. There was significant association between TTH type and the degree of insomnia (p=0.034), also between depression and the degree of insomnia (p=0.041). The regression analysis reported that depression and chronic TTH caused an increase in insomnia by 0.366 and 0.410, respectively.

Conclusion: There was an association between the type of TTH and the severity of insomnia, also between depression and the severity of insomnia. Moreover, depression increases the incidence of insomnia in TTH.

Keywords: headache insomnia, sleep disorders, tension type headache.

The relationship between severity of periodontitis with the degree of atherosclerosis in ischemic stroke patients

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Background: Periodontal diseases affecting up to 80% of the global population. Periodontitis is a long-term inflammatory disease that affects the soft and hard tissues around the teeth and it may also play a role in the pathogenesis of atheroma formation and associated with cerebrovascular disease. The Carotid Intima Media Thickness (CIMT) is a good marker for detecting early and progressive atherosclerosis. Several hypotheses link chronic infectious diseases, including periodontal tissue disease, to the atherosclerosis process and be risk factors for stroke.

Objective: The aim of study is to determine relationship between the severity of periodontitis and the degree of atherosclerosis in ischemic stroke patient.

Methods: This study is an analytic observational study with case-control approach. Subjects were ischemic stroke patients who met the inclusion criteria. We analyzed the relationship between the severity of periodontitis with Miller’s Mobility Index (MMI) and the degree of progression of atherosclerosis which was assessed by measuring the Carotid Intima Media Thickness. Measurements using an ultrasound device or B mode are used to detect the presence and progressive of atherosclerosis.

Results: In this study, 54 subjects with a mean age were 63.43 ± 7.19 years and the dominant sex was male. There was a significant relationship between severity of periodontitis (p=0.011, OR: 3.425, CI 95% 1.332-8.807) and type of profil lipid trygliceride (p=0.027, OR: 6.840, CI 95% 1.242-37.676) to Carotid intima-media thickness.

Conclusion: There is an association between severity of periodontitis and degree of atherosclerosis. Severe periodontitis is related to the increases of carotid intima-media thickness, which is a marker of atherosclerosis, so that it becomes a risk factor for stroke.

Keywords: ischemic stroke, atherosclerosis, periodontitis, miller’s mobility index, carotid intima media thickness.

Clinical characteristics and neurophysiology features of amyotrophic lateral sclerosis patients at sanglah hospital denpasar

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Background: Amyotrophic Lateral Sclerosis (ALS) is a one of motor neurons disease. The Incidents in Europe are 2.6 per 100,000 people per year and in
Emergency immune reconstitution inflammatory syndrome (IRIS) in HIV drug discontinuation with tuberculous meningoencephalitis: a case report

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Introduction: IRIS is a paradoxical condition in which the administration of antiretrovirals therapy (ARVs) to HIV patients actually causes a deterioration in clinical conditions. This article describes a case of IRIS in an HIV patient who dropped out of drugs accompanied by opportunistic infection with tuberculous meningoencephalitis.

Case Report: A 40-year-old male complained of high fever and severe headache for 1 week, then the patient had general tonic-clonic seizures with a frequency of 2 times and a duration of less than 5 minutes. After seizure, patient experiences a loss of consciousness with the only response to pain stimuli. History of being diagnosed with HIV positive since 3 years ago and only taking ARV 2 months after being diagnosed. The physical examination revealed neck stiffness with a positive Brudzinski I and Kernig Sign, as well as lateralization to the right side. Oral candidiasis was found. Reactive HIV screening tests were reactive with CD4 + 65 cells / uL. CSF examination showed 172.8 mg/dl protein, 23 mg/dl glucose, mononuclear cell 13/mm³ dominant cells, clear CSF fluid and colorless, supporting the meningitis tuberculosis diagnosis. From MSCT head contrast shows enhancement of the basal cistern. The patient received the ARV therapy tenofovir-lamivudine-efavirenz. Then the patient experienced a deterioration in clinical condition, clinical tightness with pulmonary infiltrates. The patient developed ARDS, respiratory failure and was intubated, but failed resuscitation attempts.

Conclusion: Patient was diagnosed with HIV 3 years ago but discontinued treatment after 2 months of diagnosis to develop AIDS. HIV causes diffuse inflammation throughout the body including the cardiac, where myocarditis cannot be ruled out as a cause of death. IRIS may occur when the patient has risk factors for not getting previous ARVs (withdrawal of drugs), low CD4 + count. According to the criteria proposed by Robertson, there were worsening clinical symptoms, associated with initiation of ARV administration, not explained by the presence of previously acquired infection, based on possible IRIS in this patient.

Keywords: ARV, HIV-drug withdrawal, opportunistic infections, IRIS, tuberculous meningoencephalitis

Meningoencephalitis due to SARS-CoV-2 and tuberculosis co-infection: a case report from Indonesia

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Introduction: The novel coronavirus which was firstly detected in December 2019 in Wuhan, China, has been known to cause neurological dysfunction either by directly or indirectly infecting the brain. We are reporting a case of meningoencephalitis due to co-infection of M. tuberculosis and SARS-CoV-2 in a hospital in Indonesia.

Case: A 26-year-old gentleman working as a courier in a SARS-CoV-2 red zone without adequate protection complained frequent headaches since a month to admission. M. tuberculosis was detected on very low level by GenXpert® and rapid test for SARS-CoV-2 was nonreactive. Repeated GenXpert® showed detected M. tuberculosis with undetected rifampicin resistance. Subsequent CSF SARS-CoV-2 PCR was positive although the oropharyngeal swab was negative.

Conclusion: The report of pulmonary co-infection of TB and SARS-CoV-2 has been published, however, to our best knowledge there has been no report of neurological co-infection to date. We are reporting the report of CNS co-infection from our country.

Keywords: pneumonia, con-infection, tuberculosis, covid-19.
Hemorrhagic transformation in SARS-CoV-2 infected patients: case reports from Indonesia

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While initially suggested as a primary respiratory infection, there has been increasing proof that the novel coronavirus disease (COVID-19) also leads to severe neurological manifestation particularly ischemic stroke. The hypercoagulable state observed in COVID-19 patients is thought to contribute to this phenomenon although the exact pathophysiology is still unclear. It is still unknown whether the coagulation disruption is primarily caused due to viral activity or secondary due to the inflammatory response. Hemorrhagic transformation is a complication of ischemic stroke, particularly in post-thrombolysis patients. Although ischemic stroke has been widely reported in COVID-19 patients, there have been a few reports of hemorrhagic transformation events. In this report, we describe three COVID-19 patients admitted in our hospitals with the presentation of hemorrhagic transformation. This may lead to an increased understanding of COVID-19 pathophysiology and cerebrovascular disease.

Keywords: coagulation, infection, virus, covid-19.

COVID-19 with ischemic stroke manifestations

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Background: Continuous pandemic caused by coronavirus disease (COVID-19) has been associated with high morbidity and mortality. COVID-19 has been linked to a hypercoagulable state that causes cerebrovascular complications. The most common cerebrovascular complication is ischemic stroke.

Case Presentations: We report six cases of ischemic stroke with COVID-19, age 51-81 years old, consists of four males and two females. The main risk factors are hypertension and diabetes mellitus. Brain CT scan showed large vessel ischemic stroke in four patients. The patients were treated with Low Molecular Weighted Heparin followed by dual antiplatelet (aspirin and clopidogrel). The outcome was good recovery with minimal sequelae in four patients, and death in two patients.

Conclusion: Most of the stroke type in COVID-19 is large vessel disease, with main risk factors of hypertension and diabetes mellitus. Treatment with LMWH followed by dual antiplatelet showed promising clinical improvement.

Keywords: COVID-19, Ischemic Stroke, LMWH, dual antiplatelet
A review of chest X-ray in pulmonary hypertension: correlation of diameter of right descending pulmonary artery with the mean pulmonary artery pressure

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Background: Pulmonary hypertension is a state where mean pulmonary artery pressure measured ≥ 25 mmHg. The gold standard in diagnosing this circumstance is right heart catheterization. Enlarge of right descending pulmonary artery on chest radiographs marked as a sign of pulmonary hypertension. However, the value of radiographic measurements reported was diverse.

Objective: This study analyzes the correlation between the diameter of the right descending pulmonary artery (RDPA) on conventional chest radiographs and mean pulmonary artery pressure and the right heart catheterization study to understand whether RDPA diameter on chest X-ray could be a predictor in determining the severity of pulmonary hypertension.

Methods: Thirty-five subjects were reviewed to compare RDPA diameter from a chest X-ray of the posteroanterior projection and mPAP value from the right heart catheterization. The correlation between them was analyzed using Pearson's correlation test. RDPA diameter cut-off value was defined using the ROC curve.

Result: RDPA diameter and mPAP revealed a high positive correlation (p<0.001; r=0.824). The cut-off value of the RDPA diameter was 21.8 mm (sensitivity 81% and specificity 85.7%; AUC =0.9)

Conclusion: The measurement of Right descending pulmonary artery diameter on chest x-ray has a positive correlation with mean pulmonary artery pressure. Therefore, the diameter of the right pulmonary artery on the chest x-ray can predict the severity of pulmonary hypertension.

Keywords: mPAP, pulmonary hypertension, RDPA diameter.

The correlation between Cobb's angle and pedicle rotation in adolescent idiopathic scoliosis after surgical treatment

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Background: Adolescent Idiopathic Scoliosis (AIS) is a 3-dimensional deformity that involves not only curvature in the coronal and sagittal planes but also rotation of vertebrae based on pedicle rotation. The Cobb’s angle is considered to be the gold standard in measuring the lateral curvature that could show severity of the spine deformity. The Cobb's method only evaluate the lateral curvature, and the method to determine the pedicle rotation can be used the Nash and Moe's method. The higher pedicle rotation grade had higher Cobb angles. Surgical treatment for scoliosis is indicated for the curve exceeding 40°. Posterior spinal fusion is the most commonly used technique in scoliosis surgery.

Objective: Identify the correlation between the Cobb’s Angle and pedicle rotation in AIS after surgical treatment.

Methods: The research design used in this study was Cross Sectional. The sample size of this study were 22 subjects using purposive sampling, the independent variable of this study was Cobb’s angle while the dependent variable was pedicle rotation. Spearman’s rank correlation was used to analyze the correlation between variables.

Results: The spearman's rank correlation revealed a significant correlation between the Cobb's Angle and pedicle rotation in AIS after surgical treatment with the p=0.005 and r=0.462.

Conclusion: This study demonstrates there is a significant correlation between Cobb’s angle and pedicle rotation in AIS after surgical treatment with medium strength. Surgical treatment in AIS could decrease the Cobb’s Angle and pedicle rotation.

Keywords: adolescent idiopathic scoliosis, cobb's angle, pedicle rotation.

Prostate acinar adenocarcinoma: a comparative study of Her-2 and Ki-67 expression on gleason patterns

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**ABSTRACT**

**Background:** Prostate cancer is one of the most common malignancies in men worldwide, and acinar adenocarcinoma is the most prevalent one. Gleason score and grade group is recently used to predict the therapy and prognosis based on Gleason pattern. Her-2 and Ki-67 are markers that are widely studied in breast cancer, but their role in prostate cancer is still unclear. Her-2 is a transmembrane protein involved in oncogenesis. We hope by using the basic determinant Gleason pattern to analyze the expression of these two markers, it will contribute to understanding its carcinogenesis and prognosis. This study is to determine the expression of Her-2 and Ki-67 in Gleason grade of prostate acinar adenocarcinoma.

**Methods:** An analytic observational study with cross-sectional design was done using 31 paraffin-embedded tissues of prostate acinar adenocarcinoma from the Anatomical Pathology Laboratory of Dr. Kariadi general hospital, focusing on 48 areas classified into pattern 3, 4, and 5. Immunohistochemical staining was performed using Her-2 and Ki-67 antibodies to all tissues and the data were analyzed using the Kruskal Wallis test and the Spearman test.

**Results:** There are significant differences and correlations between the expression of Ki-67 and Gleason grade, but there are neither significant differences nor correlation between Her-2 expression and Gleason grade.

**Conclusion:** Her-2 expression is almost the same among Gleason grade as basic determinant of prostate acinar adenocarcinoma.

**Keywords:** Prostate acinar adenocarcinoma, Her-2, Ki-67, Gleason grade

**Correlation between thrombocyte, erythrocyte, and ratio thrombocyte leucocyte (RTL) in patient with cardiovascular disease (CVD)**

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**Background:** Cardiovascular disease (CVD) causes at least 1.1 million deaths per year in the world. Heart and blood vessel disease are The Silent Killer, it can lead to disability or death if not treated. The stress of the walls of blood vessels will initiate hypertension and hyperplasia of vascular smooth muscles, causing endothelial damage and facilitating atherosclerosis. Endothelial dysfunction indirectly affects the function of platelets which play a role in forming the primary blockage. The formation of the primary blockage is influenced by the number and function of the platelets and can be examined by biomarkers of platelets, erythrocytes and the ratio of thrombocyte leucocytes. The purpose of this study was to look at the relationship between erythrocytes, platelets, and ratio of thrombocyte leucocyte (RTL).

**Methods:** This study used a descriptive-analytical design with a cross sectional approach. 60 cvd patients were examined for platelets, erythrocyte, Ratio of thrombocyte leucocyte (RTL), based on routine hematological examinations. The data were tested for normality and checked with the Pearson Correlation test. The research was conducted at Dr. Kariadi Hospital in the January-April 2020 period.

**Results:** Based on statistical analysis test Pearson correlation test, we obtained a moderate positive correlation between thrombocyte and RTL ($r = 0.687$), while between thrombocyte and erythrocytes were not significantly correlated ($p=0.672$; $r=0.046$) in CVD patients.

**Conclusions:** There is a correlation between thrombocyte and RTL values in CVD disease, so that biomarkers of thrombocyte and RTL are suggested to be biomarker in management of CVD.

**Keywords:** CVD, thrombocyte, erythrocyte, RTL.

**Prognostic significance of double expressor lymphoma subtype in patient with diffuse large B-cell lymphoma**

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**Background:** Diffuse large B-cell lymphoma (DLBCL) is the most common type of non-Hodgkin lymphoma in Asia and Indonesia. DLBCL, based on cell of origin is divided into GCB and non-GCB subtypes. 20% of patients have a molecular profile DEL, which has a worse prognosis.

**Objective:** to determine the relationship between DEL subtypes and cell of origin subtypes with clinical stage and 1 year overall survival of DLBCL patients in Kariadi General Hospital Semarang.

**Methods:** Sample of this study was 36 DLBCL patients in Kariadi General Hospital from January to September 2017. The data collection including: age of diagnosis, location, stage, cell of origin subtype, DEL subtype and 1 year overall survival. Data analysis using chi-square test and Kaplan meier curve.

**Results:** DLBCL DEL subtype patients were significantly associated with advanced stage ($p=0.028$). DLBCL non-GCB subtype and DEL subtype patients had a 1-year overall survival that was significantly worse than GCB subtype and non-DEL subtypes ($p=0.026$ and $p=0.006$, respectively), with a 1-year survival rate of non-GCB subtypes was 38.9% and DEL subtypes were 33.3%. DLBCL patients with advanced stages also have a 1-year overall survival that is significantly worse than the early stage ($p=0.000$), with a 1-year survival rate of 14.3%.

**Conclusion:** DLBCL non-GCB subtype patients, DEL subtypes and advanced stages have a lower 1-year overall survival rate and thus have a worse prognosis.

**Keywords:** prognostic, double expressor lymphoma, B-cell lymphoma.
Basal cell carcinoma (BCC), squamous cell carcinoma (SCC) and melanoma maligna (MM) in Dr. Kariadi Hospital Semarang, Indonesia

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Background: Skin malignancy places on number three after cervical and breast cancer in Indonesia. Malignant skin tumor can be detected from early stages, so the observation and the treatment of the tumor can be done more precisely.

Objective: Aim of this study is to determine the pattern of malignant skin tumors Basal Cell Carcinoma (BCC), Squamous Cell Carcinoma (SCC) dan Malignant Melanoma (MM) at dr Kariadi Hospital Semarang for 2012-2016 (5 years)

Methods: Retrospective malignant skin tumor research on the new patient medical records based on the type of malignancy that is: BCC, SCC, and MM, age distribution, and gender.

Results: There are 1507 patients with malignant skin tumors. The number of male patients was 683 persons (46%), while as many as 810 women (54%). The number of MM patients is 42%, while BCC is 30%, and SCC is 28%. Most age groups were 55–64 (31%).

Conclusion: Based on the research data malignant skin tumors is more common in women than men. MM is the most common malignant skin tumors, KSB is the second most common, and the third is the SCC.

Keywords: skin, cancer, epidemiology, management.

Kefir antibacterial effectiveness test against propionibacterium acne on acne vulgaris in vitro

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Background: Acne vulgaris has a significant impact on sufferers, can cause psychological trauma, decreased self-confidence, affects a person’s social life and can have fatal consequences such as anxiety disorders and depression. Severe acne vulgaris can cause severe pain, systemic symptoms, permanent scar formation, and even become a risk factor for suicide, especially in adolescents and young adults.

Objective: To find out the effectiveness of kefir antibacterial against Propionibacterium acnes in acne isolated from acne sufferers in vitro.

Methods: Laboratory experimental research was conducted to 12 patients at the Dermatology and Venereology Polyclinic of Dr. Kariadi Hospital Semarang and the Microbiology Laboratory of Dr. Kariadi Hospital Semarang. Kefir antibacterial status was obtained by measuring the diameter of the inhibition zone against the growth of Propionibacterium acnes in vitro, then bivariate analysis was performed. Differentiation tests and correlation tests were performed to determine the effectiveness of kefir as an antibacterial.

Result: The difference between the diameter of the bacterial growth inhibition zone in the kefir extract group and the positive control group was significant (p=0.03; Mann-Whitney test). The difference between the diameter of the bacterial growth inhibition zone in the clindamycin group and the positive control group was significant (p=0.03; Mann-Whitney test). The difference between the diameter of the bacterial growth inhibition zone in the kefir extract group and the clindamycin group was not significant (p=0.1; Mann-Whitney test).

Conclusion: Kefir is effective as an antibacterial against Propionibacterium acnes in acne isolated from acne sufferers in vitro.

Keywords: kefir, propionibacterium acnes, inhibition zone diameter.
ABSTRACT

A qualitative insight of Covid-19: women’s perspective on health and economic impacts

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Background: women, especially housewives in suburban areas, have been hit by the COVID-19 pandemic in Indonesia, both health and economically. However, not many researchers have examined this issue

Methods: Qualitative methodology was used to explore Indonesia suburban women’s perspectives on health and economy. A semi-structured interview guide was used to interview the participants and a saturation point was reached after the 14th interview. All interviews were audio-recorded and subjected to a standard content analysis framework

Results: Participants understand about Covid-19 as a corona, which is easily transmitted. Participants stated the need to implement health protocols, especially when leaving the house, and in dealing with this corona, people need to be vigilant but not need to be overly afraid. Most of the participants stated that their family income decreased drastically during this pandemic. This condition forces women to continue working outside the home in order to continue to support their families.

Conclusions: The outcomes provided basic information about women’s perceptions of health and economic impacts during Covid 19 pandemic, which can help design and improve existing strategies to enhance disease awareness and economic settlement data for future research on this subject.

Keywords: women’s perspective, health, economic, Covid-19.

8. NURSING

Self-efficacy, resilience, and loneliness in people with schizophrenia

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Background: Studies reported that people with schizophrenia have low self-efficacy, resilience, and experience a greater level of loneliness, which could lead to worsening symptoms. However, inpatient and outpatients’ differences in these variables have rarely been investigated.

Objective: This study aimed to compare self-efficacy, resilience, and loneliness among people with schizophrenia from outpatients and inpatients.

Methods: This cross-sectional study was conducted among 130 patients diagnosed with schizophrenia. The data were collected using the socio-demographic questionnaire, the General Self-Efficacy Scale (GSE), Connor-Davidson Resilience Scale 10 (CD-RISC 10), and the University of California Los Angeles (UCLA) Loneliness Scale Version 3. The Chi-Square, Mann-Whitney, and the t-test were used for data analysis.

Results: The results indicated that inpatient has higher self-efficacy and resilience than outpatients. Interestingly, inpatient significantly has lower loneliness than outpatients.

Conclusion: This study reveals significant differences in self-efficacy, resilience, and loneliness between the outpatient and inpatient groups of people with schizophrenia. The findings support the evidence of psychological differences in schizophrenia and provide a better understanding of different settings with this diagnosis. In the clinical practice, these results suggest developing interventions to enhance resilience and self-efficacy in schizophrenia.

Keywords: loneliness, resilience, schizophrenia, self-efficacy.

The effect of self-management based cognitive behavioral therapy on self-care behaviors of type 2 diabetes mellitus patients

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Background: Diabetes mellitus (DM) is the condition of metabolism affected by chronic hyperglycemia (the increase of glucose levels in the blood) caused by insulin secretion defect. One of the non-pharmacological therapies used to decrease the type 2 DM is self-management based cognitive behavioral therapy.

Purpose: The objective of the research was to identify the influence of self-management based CBT in type 2 DM patients.

Methods: The research used quasi-experimental method with two group pretest-posttest designs. The samples were 70 respondents with 35 of them were in the intervention group and the other 35 of them were in the control group, taken by using consecutive sampling techniques. The data were gathered using Diabetes Self-Management Questionnaires (DSMQ) and The Summary of Diabetes Self-Care Activities (SDSCA) questionnaires. The gathered data were analyzed by using descriptive statistic test, paired t-test, and independent t-test.

Results: The result of the research showed that there was the influence of self-management-based-cognitive behavior therapy on self-care behavior in pre-intervention (t=0.05, p=0.96) and post-intervention (t=-20.59, p=0.01). There was significant difference in self-care behavior between intervention group in post-Self-Management Based-Cognitive Behavior Therapy intervention and control group in DM Type-II patients under hemodialysis treatment (t=14.63, p=0.00).

Conclusion: It is recommended that Cognitive Behavior Therapy be used as one of non-pharmacological therapies to change the self-care behavior in DM Type II patients.

Keywords: self-management based-cognitive behavior therapy, self-care behavior, diabetes mellitus type 2.
The effect of soaking foot in hot and cold water on the skin temperature value of diabetes mellitus patients

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Background: Diabetes mellitus is a chronic disease that occurs because the pancreas cannot produce or the body cannot use insulin. This disease has characterized an increase in glucose levels in the blood. The goal of diabetes management is to normalize blood sugar levels and reduce problems with blood vessels. One of them is non-pharmacological therapy soaking your feet in hot and cold water alternately.

Objective: The study aimed to assess the differences in skin temperature before and after soaking the feet in hot and cold water alternately in diabetes mellitus patients.

Methods: The research method used quasi-experimental, with pretest and posttest design and control group. The research was conducted from March to April 2019 at the Universitas Sumatera Utara Hospital with 70 respondents. The sampling technique used consecutive sampling. Data were analyzed using the Wilcoxon test and the Mann Whitney test. The procedure begins and ends with hot water immersion. Soaking in hot water for 4 minutes replaced with cold water for 1 minute, repeated five times within 24 minutes.

Results: There was a significant effect between the average skin temperature values before 36.58 (SD 0.18), after treatment 37.27 (SD 0.17) p=0.00. The mean difference in skin temperature was p=0.00 or p-value <0.05.

Conclusion: The conclusion is the effect of hot and cold water soaking on skin temperature diabetes mellitus patients. The temperature of the skin on the feet increases after a hot and cold water soak indicates good skin blood flow. Good blood flow can prevent blood vessel disorders in the feet of diabetics.

Keywords: cold-soaking water, diabetes mellitus, hot soaking water, skin temperature.

The influence spouse toward quality of life (QoL) in survivors of stroke ischemic six months after onset

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Background: Social Support was impact on health. Social support ranged poor among stroke survivors. Spouse was the significance of social support Quality of life among stroke survivors was adjusted Six months after onset and the stage was low. One of the influenced factors of QoL was social support.

Objective: The study aimed to investigate the influence of spouses toward QoL in survivors of stroke Six months after onset.

Methods: This study was correlation study. The participants were 128 stroke ischemic patients after six months onset. Participants were recruited on outpatient unit. Quality of Life measured using Specific Quality of Life Scale (SS-QoL). The reliability was α= 0.8. Instrument conducted on backward translation in to item displayed in Bahasa. The statistical used t-independent analysis. Ethical approval was obtained from the Ethical Research Committee of the Tugurejo Semarang Hospital.

Results: The mean age of the study was 58.6 ±10.3 (range 35-84) with 59 females and 69 females. The statistical analysis showed that quality of life significantly different between have spouse and have no spouse (p=0.008) among survivors of stroke ischemic Six months after onset.

Conclusion: Having spouse influenced quality of life among survivors of stroke ischemic Six months after onset. Empowering spouse in stroke care should be considered

Keywords: quality of life, stroke, daily, function.

Functional outcome, cognitive, and coping in ischemic stroke three months after onset

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Background: Functional outcome, cognitive, and coping were correlated with Post-stroke depression (PSD) among stroke survivors three months after onset. No study has compared these parameters between ischemic stroke survivors with or without PSD three months after onset. This study aimed to compare functional outcome, cognitive, and coping between PSD and non-PSD survivors of ischemic stroke three months after onset and to determine odd ratio

Objective: The study aimed to investigate the influence of spouse toward QoL in survivors of stroke Six months after onset.

Methods: This cross-sectional study was conducted in outpatient services. The questionnaires were GRID-HAMD 17 for measuring PSD, Mini Mental Status Examination (MMSE), Barthel–Index (BI), and Medical Coping Modes Questionnaire (MCMQ). Mann–Whitney U test was used to analyze the total score statistically, and crosstab was used to demonstrate the odd ratio. The ethical approval was obtained from the Ethical Research Committee of the Karyadi Hospital and Medicine Faculty Universitas Diponegoro.

Results: This study involved 77 survivors of ischemic stroke three months after onset. The prevalence of PSD was 58.5. The MMSE (z = −2.37, p=0.001), BI (z=-2.39, p=0.016), coping confrontation (z = −2.583, p=0.01), and coping acceptance resignation (z=−3.115, p=0.002) were significantly different between PSD and non-PSD groups. Coping avoidance (z = −1.385, p=0.165)
was not significantly different between the two groups. Survivors experiencing mild cognitive impairment in PSD stroke survivor was three times (95% CI: 1.061–10.135) than Non-PSD stroke survivor (p=0.19). The odds ratio of moderate/severe dependent of Barthel-Index was five times (95% CI: 1.402–20.292) in PSD stroke survivor than Non-PSD survivor (p=0.014). The odds ratio of higher score confrontation in PSD stroke survivor was three times (95% CI: 1.352–9.247) than Non-PSD survivor (p=0.17). The odds ratio of low score acceptance resignation in PSD stroke survivor was five times (95% CI: 1.687–15.815) than Non-PSD stroke survivor (p=0.006).

Conclusion: This study provides good estimates of the exposure rate of functional outcome, cognitive, and coping among survivors of ischemic stroke with PSD three months after onset. Results present important initial insights for complex nursing interventions.

Keywords: post-stroke depression, functional outcome, cognitive, coping.

The effect of health belief model education in treatment adherence to chronic obstructive pulmonary disease (COPD) patients at Cut Meutia General Hospital, Lhokseumawe

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Introduction: Chronic obstructive pulmonary disease (COPD) is one of the challenges in public health and leading cause of morbidity and mortality in worldwide. The effectiveness of COPD treatment therapy is very dependent on patient adherence while undergoing treatment therapy. One of the effective interventions to increase adherence to treatment therapy is implement a Health Belief Model (HBM) in providing nursing care to patients.

Aim: The objective of the research was to identify the effect of health belief model education on treatment adherence to chronic obstructive pulmonary disease (COPD) patients at Cut Meutia General Hospital in Lhokseumawe.

Method: The research used a quasi-experiment method with non-equivalent control group design. The samples were 70 respondents (intervention group = 35 respondent and control group = 35 respondents). Patients in the intervention group received 20- to 30-minutes HBM based nursing intervention and patients in the control group received routine nursing care. Therapy adherence is measure using Morisky Medication Adherence Scale (MMAS-8) instrument.

Result: The result of the research showed that the pretest the control group therapy adherence was higher than the intervention group (z = -1.20, p=0.228), the post-test I therapy adherence to the intervention group and the control group was greater in the control group (z = -0.267, p=0.790), the post-test II therapy adherence to the intervention group was greater and the control group (z=5.7, p=0.000).

Conclusion: The conclusion was that HBM education had significant effect on adherence therapy in COPD patients.

Keywords: health belief model, education, adherence therapy, COPD.

Differences of maternal leukocyte count in premature rupture of membranes and preterm premature rupture of membranes

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Background: Premature rupture of membranes (PROM) is rupture of membranes amniotic membrane prior to the labor. PROM is associated with an increased incidence of preterm labor and infection.

Aim: To compare maternal leukocyte count in premature rupture of membranes (PROM) and preterm premature rupture of membranes (PPROM)

Methods: This cross-sectional design was conducted at Dr. Kariadi General Hospital Medical Center and Kartini General Hospital Jepara from September 2019 to January 2020. Study sample was pregnant women with premature rupture of membranes that came to Emergency Department. Samples were divided into two groups, PROM and PPROM. All samples were subjected to leukocyte count examination.

Results: This study has a total of 40 samples, with 20 samples each. In PROM, 8 (40%) leukocytosis and 12 (60%) were normal, while in PPROM 7 (35%) leukocytosis and 13 (65%) were normal. There were no significant differences in maternal leukocyte levels in PROM and PPROM (p=0.229).

Conclusion: Statistically, there were no significant differences in maternal leukocyte levels in PROM and PPROM.

Keywords: Premature rupture of membranes, aterm, preterm, leukocyte.

Association of maternal serum N-terminal Pro B-Type Natriuretic Peptide (NT-PRO BNP) with neonatal outcomes in severe preeclampsia patients

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Background: Preeclampsia is a hypertensive disease of pregnancy that is associated with disruption in the uteroplacental circulation. This condition...
Increased serum N-terminal Pro B-Type Natriuretic Peptide (NT-PRO BNP) associated with maternal complication in pregnancy with severe preeclampsia

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Background: Hypertension is the second most common cause of maternal death in the world. Predicting the occurrence of preeclampsia complications is needed to optimize management. Brain natriuretic peptide (BNP) is a polypeptide, secreted by cardiac ventricular myocytes. Research linking NT-proBNP levels with maternal complications has never been conducted in Indonesia.

Objective: To evaluate plasma NT-proBNP levels in pregnant women with preeclampsia and normotension and to find a relationship between NT-proBNP levels and maternal complications incidence.

Methods: This cross sectional study was conducted on thirty women with severe preeclampsia, NT-proBNP, neonatal complications.

Conclusions: Increased serum NT-proBNP levels are associated with severe preeclampsia and several maternal complications.

Keywords: preeclampsia, NT-proBNP, maternal complications.

Maternal and perinatal outcomes with Covid-19: lesson learned from tertiary hospital

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Background: The COVID-19 pandemic has led to global health crisis. Most studies have focused on evaluating the effects of COVID-19 on the general population, and there is still insufficient data on its impact on vulnerable populations, such as pregnant women.

Objective: To evaluate maternal and perinatal outcomes on pregnant women with COVID-19 in Kariadi as tertiary hospital in Central Java.

Methods: We prospectively collected and analyzed data for a cohort of 45 pregnant patients with COVID-19 between March 31st and September 23rd 2020 in Kariadi hospital.

Results: A total of 45 pregnant women with COVID-19, delivered 46 babies including one twin pregnancy. The symptoms ranged from asymptomatic (54.3%), mild (26.6%), moderate (8.8%), severe (2.2%), and critical (6.6%). Gestational age was 22 to 41 weeks. Cesarean section was the most mode of delivery (86.7%). Diabetes in pregnancy and HIV were the most common comorbidities found in this study, there were also seven patients came with preeclampsia. There were three maternal mortalities, we reported one maternal death (2.2%) caused by severe respiratory disease COVID-19 in second trimester. The other two death cases were pregnancy complicated with severe preeclampsia, hyperthyroid and diabetes in pregnancy. Perinatal outcomes were intrauterine fetal death (8.7%), still birth (2.2%), and severe asphyxia (2.2%).

Conclusion: Although we obtain mostly maternal and perinatal in good outcome, it is urgent in-depth analyze potential high-risk maternal death with COVID 19.

Keywords: coronavirus, COVID-19, perinatal, pregnancy.
ABSTRACT

**10. CLINICAL PATHOLOGY**

Correlation HbA1c levels with lipoprotein-associated phospholipase A2 and monocyte to high-density lipoprotein ratio in diabetes mellitus type 2

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**Background:** In the last few decades, several hypotheses have been proposed to explain the pathogenesis of Type 2 DM (DMT2) that links this disease with a systemic chronic inflammatory state. New predictors of lipoprotein-associated phospholipase A2 (Lp-PLA2) and monocyte HDL-C ratio (MHR) have been observed to predict the severity of atherosclerosis progression of atherosclerosis and cardiovascular events.

**Aim:** Proving the correlation between HbA1c with Lp-PLA2 and MHR in patients with type 2 DM.

**Method:** Analytic observational research with cross sectional design. HbA1c levels were measured by Ion Exchange HPLC, Lp-PLA2 values using the ELISA method, and MHR values based on the ratio of absolute monocytes to HDL counted manually.

**Results:** The study was conducted on 42 DMT2 patients aged 34-74 years, mean value HbA1c, Lp-PLA2, and MHR were 8.16 ± 2.10, 217.20 ± 42.49, 10.55 ± 6.11 respectively. Statistical analysis showed a positive correlation between HbA1c and Lp-PLA2 levels (p=0.046 and r=0.310), and there was a correlation between HbA1c levels and MHR values (p=0.038 and r=0.321).

**Conclusions:** There is a weak positive correlation between glycemic control (HbA1c) and atherosclerotic markers (Lp-PLA2 and MHR) in DMT2 patients.

**Keywords:** HbA1c, Lp-PLA2, MHR.

The correlation between c-reactive protein, vascular cell adhesion molecule-1, and S100b with alberta stroke program early ct score in non-hemorrhagic stroke patients

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**Background:** Stroke is the main cause of the disability and the second-most cause of death in Indonesia, which was caused by the atherosclerotic obstructions of cerebral and cervical arteries. CRP is an acute-phase protein synthesized after the stimulation of the pro-inflammatory cytokines. VCAM-1 is a sign of both inflammation and atherosclerosis. S100B protein is the dominant protein in the central nervous system released in the event of inflammation in the brain, such as stroke. A CT-scan is a gold-standard diagnosis of non-hemorrhagic stroke. However, it has a limitation for the onset of <6 hours. The ASPECTS system enhances the sensitivity of non-contrast CT-scan in assessing early ischemic changes in areas supplied by the MCA. The correlation between inflammatory variables and ischemic assessments on CT-scan needs to be analyzed further.

**Objective:** This study aimed to prove the correlation between acute inflammatory signs and ischemic assessment using ASPECTS in non-hemorrhagic stroke patients.

**Methods:** This study was a cross-sectional study conducted in April – September 2019 on 47 non-hemorrhagic stroke patients in Diponegoro National Hospital, Telogorejo Hospital, and Tugurejo Hospital, Semarang. The diagnosis of non-hemorrhagic stroke was based on the non-contrast CT-scan and subsequent ASPECTS assessment. We examined CRP, VCAM-1, and S100B levels using ELISA principle. We also performed the correlation test between variables using the Spearman test.

**Results:** The results of the correlation test between the CRP, VCAM-1, and S100B levels with the ASPECTS were r = -0.035, p = 0.815; r = -0.117, p = 0.432; and r = -0.145, p = 0.332, respectively.

**Conclusions:** There was no significant correlation between the CRP, VCAM-1, and S100B levels with the ASPECTS. The increase in inflammatory markers of CRP and S100B was not accompanied by poor ASPECTS assessment, which depended on the appearance of lesions on the CT-scan.

**Keywords:** CRP, VCAM-1, S100B, ASPECTS, Non-Hemorrhagic Stroke.

Differences in AGEs-N-Carboxymethyllysine and kidney injury molecule-1 in non-diabetic subjects, diabetic subject with and without diabetic nephropathy

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**Background:** Stroke is the main cause of the disability and the second-most cause of death in Indonesia, which was caused by the atherosclerotic obstructions of cerebral and cervical arteries. CRP is an acute-phase protein synthesized after the stimulation of the pro-inflammatory cytokines. VCAM-1 is a sign of both inflammation and atherosclerosis. S100B protein is the dominant protein in the central nervous system released in the event of inflammation in the brain, such as stroke. A CT-scan is a gold-standard diagnosis of non-hemorrhagic stroke. However, it has a limitation for the onset of <6 hours. The ASPECTS system enhances the sensitivity of non-contrast CT-scan in assessing early ischemic changes in areas supplied by the MCA. The correlation between inflammatory variables and ischemic assessments on CT-scan needs to be analyzed further.

**Objective:** This study aimed to prove the correlation between acute inflammatory signs and ischemic assessment using ASPECTS in non-hemorrhagic stroke patients.

**Methods:** This study was a cross-sectional study conducted in April – September 2019 on 47 non-hemorrhagic stroke patients in Diponegoro National Hospital, Telogorejo Hospital, and Tugurejo Hospital, Semarang. The diagnosis of non-hemorrhagic stroke was based on the non-contrast CT-scan and subsequent ASPECTS assessment. We examined CRP, VCAM-1, and S100B levels using ELISA principle. We also performed the correlation test between variables using the Spearman test.

**Results:** The results of the correlation test between the CRP, VCAM-1, and S100B levels with the ASPECTS were r = -0.035, p = 0.815; r = -0.117, p = 0.432; and r = -0.145, p = 0.332, respectively.

**Conclusions:** There was no significant correlation between the CRP, VCAM-1, and S100B levels with the ASPECTS. The increase in inflammatory markers of CRP and S100B was not accompanied by poor ASPECTS assessment, which depended on the appearance of lesions on the CT-scan.

**Keywords:** CRP, VCAM-1, S100B, ASPECTS, Non-Hemorrhagic Stroke.
**Background:** Diabetic nephropathy (DN) is a complication of diabetes mellitus (DM), characterized by persistent albuminuria. N-carboxymethillysine (CML) is the largest AGEs, formed from the fructoselysine amadori. Kidney Injury Molecule 1 (KIM-1) is a type 1 transmembrane glycoprotein.

**Objective:** Analyzing differences in AGEs-CML and KIM-1 levels in non-DM subject, DM without and with DN.

**Methods:** A cross-sectional analytic observational study was conducted on 25 non-DM subjects (K1), 25 DM without DN (K2), and 25 DM with DN (K3) in PROLANIS Semarang. AGEs-CML and KIM-1 levels were measured using the ELISA method. Inter-group AGEs-CML levels were analyzed using the one-way ANOVA test, followed by post hoc Games-Howell. The levels KIM-1 between groups were analyzed using the Kruskall-Wallis test, followed by Mann Whitney post hoc. All value considered significant if p<0.05.

**Results:** There were differences in AGEs-CML levels between K1 (739.89 ± 227.37 ng/ml) and K3 (911.79 ± 107.44) (p = 0.04), between K2 (798.82 ± 153.03) and K3 (p=0.019) and there was no difference in K1 and K2. There were differences in KIM-1 level between K1 (9.82 (5.99 – 14.83) pg/ml) and K2 (15.31 (10.12 – 30.21 (p=0.906) (p<0.001), between K1 and K3 (15.11 (8.27 – 25.63) (p<0.001) and there was no difference between K2 and K3 (p=0.441)

**Conclusion:** The highest AGEs-CML levels were significantly found in the K3 group, followed by K2 and the lowest in K3. KIM-1 levels were significantly found in the K2 group, followed by K3 and the lowest in K1.

**Keywords:** AGEs-CML, diabetes mellitus, DN, KIM-1.

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**11. INTERNAL MEDICINE**

**Vitamin-D supplementation in subjects with hypovitaminosis-D: a randomized double-blind, placebo-controlled trial**

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**Background:** the prevalence of vitamin D deficiency in Indonesia was quite high, but that has been rarely a concern. Because of that, the studies of vitamin D supplementation have not been conducted.

**Aim:** to assess the effectiveness of vitamin D supplementation in the subjects with hypovitaminosis D.

**Method:** randomized double-blind, placebo-controlled trial, and pre and post-test design only, April-May 2017. Subjects were the employees of health institutions in Semarang. Data were collected through questionnaires for the risk factors and laboratory examination for the vitamin 25 (OH) D serum levels. Subjects were divided into vitamin D and placebo groups. Intervention was performed with 1000 IU vitamin D and the placebo for 12 weeks. Serum samples were taken to assess the 25 (OH) D level. Statistical analysis was done with chi-square method comparing the baseline characteristics between the vitamin D and placebo groups. An unpaired t test was used to compare mean of the beginning and last 25 (OH) D levels in the vitamin D and placebo groups.

**Results:** from 81 subjects, 76 subjects were hypovitaminosis D. The results between the vitamin D and placebo groups after 4-week intervention show no significant difference, but significant at 12th weeks with p = 0.015. The difference between the two groups at 4th weeks is not significant, but the 12-week delta is significantly different with p = 0.009. Based on the results, in the vitamin D group, the 25 (OH) D level of serum of 4 and 12 weeks increased from the initial 25 (OH) D level of serum, but statistically not significant.

**Conclusion:** results of this study indicate the high prevalence of hypovitaminosis D among productive ages of officer in Indonesia. The screening of the 25 (OH) D level of serum, especially in indoor work and wearing hijab, was highly recommended. The supplementation of vitamin D3 doses of 1000 IU / day for 12 weeks had significantly increased levels of 25 (OH) D in the serum.

**Keywords:** sunlight, vitamin D, 25(OH) D serum, hypovitaminosis D, risk factors.
Frail geriatric patient with Covid-19 Infection

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Background: Covid 19 is a respiratory system disease caused by SARS-CoV 2. Geriatric patient with Covid-19 equipped with multiple comorbidities and a high vulnerability (low frailty index) has a high morbidity and mortality rates.

Case Illustrations: A 75-year-old woman presents with confusion and fever. She was treated in the previous hospital for 7 days, experienced a deterioration of consciousness and had respiratory failure, thus was referred to Kariadi Hospital. The patient had comorbid hypertension, type 2 diabetes mellitus and grade 2 osteoarthritis genu bilateral. Body weight 45 kg, height 150 cm, Body Mass Index 20 kg/m2, blood pressure 128/58 mmHg, Pulse 81x/minute, Respiratory rate 20x/minute, Temperature 37.5°C, 100% oxygen saturation, Frailty Index 0.1, Katz Index G, Norton score 11/20. Leucocytes 9100, Lymphocytes 10%, Neutrophil Lymphocyte Ratio 2.2, Blood Glucose 247 mg/dL, CRP 4.41 mg/dL, Ferritin 5472.28, D-Dimer > 20,000 ug/dL, Fibrinogen 498 mg/dL, Procalcitonin 0.39, Chest X-ray showed pneumonia infiltrates with cardiomegaly. The RT-PCR swab examination showed positive SARS-CoV-2. Brain CT showed lacunar infarct and aging atrophy cerebri. The patient was admitted to intensive isolation room for 10 days because of Acute Respiratory Distress Syndrome (ARDS) and Covid 19. During treatment in intensive isolation room, the patient got Covid-19 therapy, high-pressure oxygen therapy with Nonbreathing Oxygen Mask (NRM) 10 liters/minute for 3 days, anticoagulants, insulin, antihypertensives, repositioning every 2 hour, physiotherapy, Anti-decubitus mattress and adequate nutrition therapy. In isolation room the patient got 3L/minute oxygen cannula, management of decubitus, Osteoarthritis, infarct stroke and immobility.

Conclusion: Management of frail geriatric patient with Covid-19 has its own challenges because of the high mortality rate. It requires a comprehensive and multidisciplinary approach.

Keywords: geriatric patient, frail, Covid-19.

Risk factors for mortality among HIV/AIDS patients

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Background: Morbidity and mortality of HIV/AIDS infections is still high and as a global health problem particularly in Low-Middle Income Countries (LMICs). Indonesia ranks third in Asia Pacific in increasing HIV infection. A study on risk factors for mortality in HIV/AIDS patients in Dr. Kariadi General Hospital has never been conducted. This study analyzed the risk factors for mortality among HIV/AIDS patients.

Methods: Case-control study, data from medical records of inpatients and outpatients in Dr. Kariadi General Hospital from January 2015 to December 2017.

Relationship between body mass index, handgrip, and cognitive status on frailty status in elderly women

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Aim: To determine the relationship between body mass index, handgrip, and cognitive status on frailty status in elderly women at some elderly integrated health services (posyandu lansia), Semarang City.

Methods: This study used a cross sectional design with a consecutive sampling method of 70 subjects. Subjects measured vital signs, weight and height. Subjects were then assessed for handgrip strength, cognitive status and frailty status. Univariate and bivariate data analysis used SPSS 25 with the Spearman correlation test.

Results: A total of 70 elderly women followed this study with an average age of 65.96 years old. As many as 67.1% of elderly women have hypertension. There are 70% of all elderly women with pre-frail status and 4.3% with frail status. There is no significant relationship between body mass index and frailty status (p=0.328). There is no significant relationship between handgrip and frailty status (p=0.476). There is no significant relationship between cognitive status and frailty status (p=0.664).

Conclusion: The elderly women at the some elderly integrated health services (posyandu lansia), Semarang City mostly have pre-frail status. There is no significant relationship between body mass index, handgrip, and cognitive status on frailty status in elderly women.

Keywords: body mass index, handgrip, cognitive status, frailty.
Results: Study subject: Two hundred and ten of HIV/AIDS patients were included; 105 (56.75%) as cases and 105 (9.65%) control patients. The significant risk factors for mortality were as follow: male sex (p = 0.030); age ≥ 45 years (p = 0.035); non compliance to treatment (p = 0.000); WHO clinical stage III and IV (p = 0.000); co-infection of pulmonary tuberculosis (p = 0.000); CD4 cell count < 200 cells/mm$^3$ (p = 0.000); eGFR < 60 mL/minute/1.72 m$^2$ (p = 0.001) and haemoglobin level < 10 g/dL (p = 0.008). The non-significant risk factors for mortality were as follow: level of education (p = 0.650); Hepatitis B co-infection (p = 0.153) and Hepatitis C co-infection (p = 0.506). The most important risk factors for mortality in this study were non compliance to treatment (p = 0.003; OR = 3.285) and CD4 count < 200 cells/mm$^3$ (p = 0.014; OR = 5.480).

Conclusion: In this study, the risk factors for mortality in HIV/AIDS patients were male sex; age ≥ 45 years; non compliance to treatment; WHO clinical stage III and IV; coinfection of pulmonary tuberculosis; CD4 count < 200 cells/mm$^3$; eGFR < 60 mL/minute/1.72 m$^2$ and Hb level < 10 g/dL. The most important risk factors for mortality in this study were non compliance to treatment and CD4 count < 200 cells/mm$^3$.

Keywords: mortality, risk, HIV, morbidity.

Total occlusion of coronary artery without ST segment elevation: a case series of ‘de Winter’ electrocardiogram pattern

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Background: A ‘STEMI equivalent’ electrocardiogram (ECG) pattern describes an acute thrombotic occlusion of a large coronary artery without elevation of ST-segment. This pattern must be recognized and treated with emergent reperfusion therapy. De Winter syndrome is a special ECG pattern reflecting acute occlusion in the proximal segment of LAD (left artery descending) coronary artery and a primary percutaneous coronary intervention (PCI) should be performed as early as possible.

Case illustration: We present two patients who were admitted to emergency department with symptoms of chest pain. Their ECGs revealed de-Winter T waves and then coronary angiography was performed. Total occlusion in the proximal segment of LAD coronary artery was observed in both patients, and stents were implanted to the culprit lesion. Both ECG’s patient shows an upsloping ST-segment depression (STD, >1 mm) starting from the J-point, with symmetrical, tall and significant T-waves in the precordial leads. This ECG pattern indicates a LAD coronary artery obstruction. The de Winter’ ECG pattern is not mentioned in the ESC guidelines, but it is important to recognize this rare ECG pattern as STEMI equivalent, and it has to be treated with prompt revascularization therapy.

Conclusion: The ‘de Winter’ ECG pattern, as other ‘STEMI equivalent’, must be recognized promptly and treated as soon as possible with emergent reperfusion by percutaneous coronary intervention.

Keywords: De Winter, STEMI equivalent, proximal LAD occlusion, ST-segment depression.

Risk score of contrast induced nephropathy in patients after percutaneous coronary intervention

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ABSTRACT

**Background:** Contrast-induced nephropathy (CIN) after percutaneous coronary intervention (PCI) is still an issue in modern revascularization era. Recent risk stratification model used creatinine as biomarker which has some limitations. Increased ≥ 10 % of Cystatin-C after PCI has been proven as one of earliest and accurate biomarkers of CIN after PCI. Purpose of this study to develop risk score based on predictors of contrast-induced nephropathy in patients after PCI with Cystatin-C as biomarker

**Methods:** A prospective cohort study of 129 patients after PCI at Dr. Kariadi General Hospital Semarang. Predictor analysis was carried out using bivariate chi-square test and multivariate logistic regression. The independent predictors obtained were then used as risk score variables. The quality of the risk score was tested by the Hosmer and Lemeshow calibration test and AUC ROC analysis for discrimination test.

**Results:** There were 3 independent predictors used as the risk score variables: Hypotension (score 1), anemia (score 1), creatinine baseline > 1,5 mg/dl (score 1). Patients with total score ≥ 3 has higher risk to have CIN after PCI. The risk score had a good quality with the Hosmer and Lemeshow calibration test > 0.05 and relative modest discrimination ROC AUC 0.700 (95% CI 0.585-0.815; p=0.001).

**Conclusions:** A risk score for risk stratification CIN after PCI has been created. The score has good calibration and modest discrimination in predicting the risk of CIN after PCI.

**Keywords:** predictors of contrast-induced nephropathy, percutaneous coronary intervention, risk score.

**Effect of preoperative inspiratory muscle training on right ventricular systolic function in patients after heart valve replacement surgery**

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**Background:** Burns are commonly caused by thermal injuries that are often encountered in everyday life. Burns may cause tissue damage and tissue infection. Melatonin, a hormone that acts as an antioxidant and anti-inflammatory, can be used as supportive therapy in patients with burns by preventing excess tissue damage, decreasing inflammatory response, and preventing extreme leukocyte increase.

**Aim:** To investigate the effects of melatonin supplementation on leukocyte count and hematocrit levels in burn-induced wistar rats

**Melatonin prevented the elevation of leukocyte count and hematocrit levels in burn-induced wistar rats**

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**Conclusions:** Melatonin might have role in preventing a steeper rise of leukocyte count and hematocrit levels in burns injury. If confirmed by further studies, melatonin might be potential for adjuvant management in burns.

**Keywords:** burns injury, leukocyte, hematocrit, melatonin.
and 9.9 ± 2.7 mm; p = 0.039). ICU length of stay in the intervention group was significantly shorter than the control group (3.2 ± 0.8 and 4.2 ± 1.3 days; p = 0.044).

**Conclusion:** Patients underwent conventional preoperative rehabilitation added inspiratory muscle training had better right ventricular systolic function than patients in control group.

**Keywords:** right ventricular systolic function, preoperative cardiac rehabilitation, inspiratory muscle training, heart valve surgery

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**Correlation between CD4 count with left atrial and ventricular global longitudinal strain in patients with human immunodeficiency virus**

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**Background:** The risk of cardiac dysfunction in people with human immunodeficiency virus (HIV) is associated with CD4 cell count and global longitudinal strain (GLS) is a marker of cardiac function. The correlation between CD4 count and GLS in HIV remains unclear. The purpose of this study was to investigate their correlation in patients with asymptomatic HIV.

**Methods:** This was an observational cross-sectional study. Left atrial and ventricular GLS was done using two-dimensional echocardiography. The left atrial GLS consisted of a reservoir, conduit and atrial pump. Baseline and nadir CD4 counts were obtained from medical records, while current CD4 and CD4 percentage were with mean CD4% was 168, 168 and 392 cells/µL, respectively, with mean CD4% was 14.81±2.6, respectively. Left ventricular GLS was positively correlated with the baseline CD4 (r=0.313, p=0.029), nadir CD4 (r=-0.290, p=0.043), current CD4 (r=-0.487, p<0.001), CD4 percentage (r=0.382, p=0.007) and ARV duration (r=0.0424, p=0.002). HIV patients with current CD4 count ≥450 cells/µL or CD4 percentage ≥17% had better left ventricular GLS compared to current CD4 <450 cells/µL or CD4 percentage <17% (p=0.025 and p=0.031).

**Conclusion:** CD4 count HIV correlates with left ventricular GLS, but not left atrial GLS in patients with HIV.

**Keywords:** CD4 counts, Left ventricular global longitudinal strain, Left atrial global longitudinal strain, Human immunodeficiency virus

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**Melatonin prevented the increased serum lactate levels and the reduced hemoglobin levels in burn-induced Wistar rats**

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**Background:** Burns are the most common and devastating form of trauma, yet constitute as common cause of morbidity worldwide. Complications of burns such as sepsis and tissue hypoperfusion may increase serum lactate and reduce hemoglobin. Measuring lactate levels has been proven to be a useful predictive marker of hypoperfusion and sepsis in patients with burns. Melatonin which acts as an anti-inflammatory and antioxidant has been proposed to be used as a pharmacological adjuvant in patients with burns in which it reduces oxidative damage.

**Aim:** To investigate the effects of melatonin supplementation on serum lactate and hemoglobin levels in burn-induced male Wistar rats.

**Method:** This was an experimental animal study with randomized control group design. All samples (n= 12 male Wistar rats) were randomized and divided into two groups. Each rat was exposed to a hot metal rod for 10 seconds to induce 30% burns injury. Rats in the control group were administered with placebo (aquadest), while rats in the experimental group were administered with melatonin intraperitoneally at 0, 8, and 16 hours post burns injury. Blood samples were collected from the retro-orbital sinuses at 0, 3, and 24 hours after treatment. Data were statistically analyzed using Paired t-Test, Independent t-Test Mann-Whitney Rank Test and Wilcoxon test.

**Results:** There were no significant differences in lactate and hemoglobin levels between melatonin group and control group in 0 hours after treatment (T0), 3 hours after treatment (T3), and 24 hours after treatment (T24) (p>0.05). There were increased lactate levels and decreased hemoglobin levels in both melatonin and control groups, however the increment of lactate and the decrement of hemoglobin were steeper in control group compared to melatonin group. There were higher serum lactate increments and higher hemoglobin decrement at 24 hours (ΔT0–T24) in control compared to melatonin group (p<0.05).

**Conclusion:** Melatonin might prevent dramatic rise of serum lactate levels and decrease of hemoglobin levels until 24 hours after treatment in burns injury. If confirmed by further studies, melatonin might have a role as adjuvant therapy in burns.

**Keywords:** Burns injury, serum lactate level, hemoglobin, melatonin.
Visual function recovery post decompression surgery in meningioma: a case report

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Background: Meningiomas represent about 20% of intracranial tumors. Due to the proximity of these tumors to the optic nerve, typically progressive unilateral vision loss, over several months to years, is the classic clinical presentation.

Case Presentation: A 23 y.o. male presented with a progressive monocular visual loss of the right eye since 4 months. Visual acuity on the right eye was 1/300 and 6/6 on the left eye. Color vision and contrast sensitivity of the left eye was excellent. Fundus examination showed papilledema on right eye and left eye was within normal limit. MRI reveals a strong enhancing mass along the right and left sphenoid wing, measuring approximately 3.9 x 5.5 x 3.3 cm, extending into the parasellar region, compressing optic chiasm and encasing right and left N.III, N.IV and N.V. Patient were diagnosed with compressive optic neuropathy on the right eye due to meningioma. Following the decompression surgery, visual acuity on the right eye improved to 6/24, color vision 25/38 and contrast sensitivity was 5%. Patient was discharged 4 days after surgery and scheduled for routine follow-up at the polyclinic.

Conclusion: Vision loss due to compressive effect of meningioma may be reversible. The severity and the duration of vision loss due to compression may affect the final visual recovery. Early detection and prompt multidisciplinary approach are necessary to obtain a better outcome.

Visual function outcome post intracranial surgery in sellar region brain tumor

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Background: The proximity of sellar tumor to the optic nerve and optic chiasm can cause compressive optic neuropathy. The manifestation of optic pathway dysfunction varies from papilledema to optic nerve atrophy and affects visual function. This case report aims to present two patients with sellar region tumor treated with intracranial surgery.

Case Presentation: Two cases of sellar region tumor patients had complaints decreased visual function treated with intracranial surgery.

Case 1. An 8 years old female, visual acuity pre and post-surgery right eye (RE) 2.2;1.3, left eye (LE) 0.70;0.5. Color vision pre and post-surgery RE 0/38;0/38, LE 0/38;1/38 plate. Contrast sensitivity RE pre and post-surgery can’t be evaluated and left eye 10%;2.5%. Visual field pre and post-surgery were hemianopsia bitemporal. The evaluation had been taken 1 week post-surgery.

Case 2. A 24 years old female, visual acuity pre and post-surgery RE 1.5;1.0, LE 1.8;1.8. Color vision pre and post-surgery RE 0/38;1/38, LE 0/38;0/38 plate. Contrast sensitivity RE pre-surgery can’t be evaluated and 25% post-surgery and LE pre and post-surgery can’t be assessed. Visual field pre and post-surgery were hemianopsia bitemporal. The evaluation had been taken 1 week post-surgery.

Conclusion: All patients with sellar region tumors who underwent intracranial surgery had visual function improvement although progress differed between individuals. It represents a special challenge for the physicians treating it.

Keywords: craniopharyngioma, intracranial surgery, intracranial tumor, visual function.
15. OTO-RHINO-LARYNGOLOGY

The effect of cigarette smoke on the histopathological changes of the eustachian tube of Wistar rat

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Background: Inflammation due to irritation of cigarette smoke causes metaplasia of the squamous epithelium of the Eustachian tube. Data on the prevalence and incidence of Eustachian tube dysfunction are still limited.

Method: This study was a true experimental study with post-test only control group design using Wistar rats as the subjects. We included 24 Wistar rats in the study and divided them into four groups. The number of Wistar rats in each group was 6. The control group was not exposed to cigarette smoke. The treatment group 1, 2, and 3 were each exposed to four cigarettes, eight cigarettes, twelve cigarettes per day for thirty days, respectively. We assessed the histopathological changes of the Eustachian tube using four parameters, namely inflammatory cells, cilia, goblet cells, and epithelium. Finally, we analyzed the data using the Kruskal-Wallis test and the Mann Whitney test.

Result: The histopathological of the Eustachian tube occurred in inflammatory cells, cilia, goblet cells, and epithelial metaplasia. Group 1 showed grade 1 changes in all parameters assessed. Group 2 showed grade 2 changes in all parameters assessed. Meanwhile, group 3 showed grade 3 changes in all parameters assessed compared to other groups (p<0.05). There was a significant difference between the treatment group and the control group (p<0.05).

Conclusion: Cigarette smoke with stratified doses affects in the histopathological changes of the Eustachian tube.

Keywords: cigarette smoke, eustachian tube, Wistar rat.

Obstructive sleep apnea syndrome (OSAS) decrease concentration levels in young adults

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Background: Obstructive Sleep Apnea Syndrome (OSAS) is sleep-disorder that’s characterized by recurrent episodes of upper airway obstruction during sleep. Around 14% of world populations suffer from OSAS. OSA patients are 7.5 to 20 times more likely to have difficulties with concentration, learning new tasks, and execution of monotonous tasks.

Aim: The primary objective of this study was to investigate the relationship between Obstructive Sleep Apnea Syndrome (OSAS) and concentration level in young adults.

Method: This is an analytic observational study with cross-sectional design. Sampling was carried out with total sampling. Samples that qualified the inclusion and exclusion criteria were assessed by OSAS using the Epworth Sleepiness Scale (ESS) questionnaire and Digit Symbol Substitution Test was used to determine the concentration level. The data were analyzed, using the chi-square test and the prevalence (PR) test.

Result: The Chi-square test showed that there was a significant relationship between OSAS and concentration level (p=0.033). The Prevalence Ratio test found that OSAS decreased concentration level by 1.55 compared to not OSAS.

Conclusion: There was a significant relationship between OSAS and concentration level in young adults. OSAS patients are 1.55 more likely to have decreased concentration level when compared with healthy individuals.

Keywords: obstructive sleep apnea syndrome, concentration level, cognitive function.

The effectivity of nigella sativa on neutrophil lymphocyte ratio and mean platelet volume in laryngopharyngeal reflux

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Background: Laryngopharyngeal reflux (LPR) is the backflow of stomach contents into the esophagus, larynx and hypopharynx which can cause inflammation of the tissues. Diagnosis of LPR is based on clinical symptoms and flexible laryngoscopy examination (Fiber Optic Laryngoscopy). Other tests to determine inflammation can be used Neutrophil Lymphocyte Ratio (NLR) and Mean Platelet Volume (MPV). Adjuvant therapy such as Nigella sativa (black cumin) can be added, which has anti-inflammatory, antioxidant, gastroprotective functions.

Method: It was an experimental intervention study with Pre and Post-test randomized control group design of 36 subjects with LPR in Kariadi Hospital Semarang, Soetrasno Hospital Rembang and Soeselo Hospital Slawi in January 2020 - April 2020. The treatment group was given Omeprazole and Nigella sativa therapy, whether the control group was treated with Omeprazole only.

Result: There was no statistically significant difference between the two groups although there was a better improvement in the treatment group, it showed a lower NLR and higher MPV (p>0.05).

Conclusion: The results of NLR and MPV examinations in LPR patients who were given omeprazole plus nigella sativa therapy were better than without nigella sativa, there was a difference but it was not statistically significant.

Keywords: LPR, NLR, MPV, nigella sativa.
16. NUTRITION

Fat intake in Javanese breast cancer patients: any difference?

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Background: Breast cancer occupies the second most prevalent women malignancy in Central Java. The risk of breast cancer incidence drops by 2.5 times for breast cancer if fat consumption is reduced by 50%, although not all types of fat intake increase the risk of breast cancer incidence. Fat consumption in Indonesia increased by 11% in the last 7 years.

Objectives: To analyze the differences of fat intake between breast cancer patients compared to healthy subjects.

Methods: This study was a cross sectional study. We invited 45 outpatients diagnosed with breast cancer in Kariadi Hospital from January to August 2019 and 45 healthy subjects who were relatives or friends who met inclusion criteria to participate in this study. Various types of fat intake were measured using quantitative food frequency questionnaires. Statistical analysis used Chi-Square test and Mann Whitney test for non-parametric tests and Independent T-Test for parametric data.

Results: There was a significant difference in Poly Unsaturated Fatty Acids (PUFA) intake of breast cancer patients compared to healthy subjects (p = 0.022). This study found no significant differences in total fat intake (p = 0.677), Saturated Fatty Acids (SFA) (p = 0.368), Mono Unsaturated Fatty Acids (MUFA) (p = 0.593), omega 3 (p = 0.095), omega 6 (p = 0.092), and Trans Fatty Acid (TFA) (p = 0.669) between breast cancer patients and healthy subjects.

Conclusion: There is only a significant difference in PUFA intake between breast cancer patients and healthy subjects, but not with other type of fats. Further study, there is a need to using more precise and objective measurement of fat intake that can be done in animal model study.

Keywords: fat intake, breast cancer, examination.

Correlation between nutric score and adequacy of energy and protein intake with duration of mechanical ventilation (MV) in the intensive care unit (ICU) patients

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Background: Malnutrition in the ICU patients increases morbidity, mortality, cost, and duration of mechanical ventilation. Nutric score has been validated as a screening tool in critically ill patients to identify patients at risk of malnutrition. The pathophysiology of malnutrition in critically ill is caused by severity of disease resulting in hypercatabolism. Delivering protein energy intake will reduce hypercatabolism and maintain lean body mass that affect outcome.

Objective: To analyze the correlation between nutric score and adequacy of energy and protein intake with duration of MV.

Methods: This cross sectional study enrolled 65 subjects in the ICU of Dr Kariadi Hospital Semarang during May to July 2020. The nutric score was determined within 24 - 48 hours. Statistical analysis uses correlation test.

Results: The mean nutric score was 2.3±1.49, duration of MV was 3.9±4.44. There was significant correlation between nutric score and duration of MV (r=0.685; p<0.001). The mean adequacy of energy intake was 1448.7±235.87 and protein intake was 57.9±11.94. There was significant negative correlation between adequacy of energy intake and MV duration (r=-0.246; p=0.048). There was significant negative correlation between protein adequacy intake and MV duration (r=-0.34, p=0.006).

Conclusion: Nutric score is correlated with duration of MV in the ICU patients. Adequacy of energy and protein intake has significant correlation with duration of MV.

Keywords: critically ill, ventilation, malnutrition, nutric score, nutritional screening.

Correlation of obesity status with zinc serum levels and insulin resistance in perimenopause obese women

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Background: Zinc is an essential mineral that is involved in many physiological functions and metabolism. Zinc status is often associated with fat accumulation, adiposity, body fat distribution, and insulin resistance.

Objective: To examine the correlation between obesity status with zinc serum levels and insulin resistance in perimenopause obese women.

Methods: This cross sectional study enrolled 65 participants with perimenopause obese admitted to the internal medicine department of Kariadi Hospital Semarang. The insulin resistance was measured using homeostasis model assessment (HOMA). The zinc serum levels were measured by atomic absorption spectrophotometry.

Results: There was a significant positive correlation between BMI and body fat percentage (r=0.68; p<0.001). There was also a significant positive correlation between BMI and body fat percentage (r=0.75; p<0.001). The mean zinc serum levels were 1.1±0.2 mg/dL. There was a significant negative correlation between zinc serum levels and HOMA (r=-0.45; p=0.01).

Conclusion: Zinc serum levels were positively correlated with BMI and body fat percentage.锌 serum levels were negatively correlated with insulin resistance.

Keywords: obesity, zinc serum levels, insulin resistance, perimenopause, obese women.
ABSTRACT

**Background:** Obesity is one of the global health problems. The prevalence of obesity in women is higher than men. Various metabolic problems are caused by obesity, such as insulin resistance and deficiency of micronutrients such as zinc. The occurrence of insulin resistance in obesity is also influenced by zinc deficiency.

**Objective:** To analyze the correlation of obesity status with serum zinc levels and insulin resistance in perimenopause obese women.

**Research method:** Correlational research with 62 perimenopause obese women subject aged 40-50 years old who met the inclusion and exclusion criteria. Serum zinc levels were measurement using Atomic Absorption Spectroscopy (AAS) and insulin resistance using Homeostasis Model Assessment of Insulin Resistance (HOMA IR) formula. Serum zinc levels, fasting insulin, fasting blood glucose taken from venous blood. Hypothesis testing uses Pearson correlation.

**Results:** 12.9% had low serum zinc levels and high HOMA IR 9.09%. There was a significant negative correlation between Body Mass Index (BMI) with serum zinc levels ($r=-0.402$; $p=0.001$) and significant positive correlation between BMI with insulin resistance ($r=0.396$; $p=0.001$). There was a significant negative correlation between Waist Circumference (WC) with serum zinc levels ($r=-0.18$, $p=0.161$) and significant positive correlation between WC with insulin resistance ($r=0.284$, $p=0.025$). And significant negative correlation between serum zinc levels with insulin resistance ($r=-0.404$; $p=0.001$).

**Conclusion:** There is a correlation between obesity status with serum zinc levels and correlation between obesity status with insulin resistance in perimenopause obese women.

**Keywords:** insulin resistance, obese women, obesity status, serum zinc levels.

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17. SURGERY

**The role of spinal endoscopic surgery for the management of degenerative spinal diseases**

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**Background:** Degenerative spinal disease increases in proportion to life expectancy. Surgical treatments that play an important role in the management of degenerative spinal disease have evolved from open surgery to minimally invasive surgery as well as endoscopic spinal surgery. Advanced pathological understanding, diagnostic imaging, and instrument progress have support for endoscopic spinal surgery.

**Objective:** To report the current situation of endoscopic spinal surgery to treat degenerative spinal diseases in the Department of Neurosurgery of Kariadi Hospital.

**Method:** Review the Endoscopy Spine Surgery case in the Department of Neurosurgery of Kariadi Hospital with degenerative spinal diseases including canal stenosis and disc herniation at all levels.

**Results:** A total of 126 degenerative spinal diseases have been treated with endoscopic spinal surgery. Most pathologies are herniation with 90 cases and canal stenosis 36 cases. Most locations are lumbar areas in 105 cases.

**Conclusion:** Endoscopic surgery appears to be an option for treating degenerative spinal diseases especially for herniation and canal stenosis. The lumbar and thoracic regions are common areas for endoscopic spinal surgery.

**Keywords:** degenerative spine disease, endoscopy spine surgery, disc herniation, canal stenosis.

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**The effect of glutathione as adjuvant therapy on levels of TNF-Alfa and IL-10 in Wistar rat peritonitis model**

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**Effect of Glutathione Administration as Adjuvant Therapy to NO and MDA Level in Wistar Rat Peritonitis Model**

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**Background:** Excessive amounts of free radicals beyond the antioxidant levels in the body will cause a condition which is called oxidative stress. Nitric oxide (NO) and MDA are produced under conditions of oxidative stress. Glutathione (GSH) is the most endogenous antioxidant synthesized in humans. Therefore this study aims to prove whether the administration of Glutathione as an adjuvant therapy can reduce levels of NO and MDA in peritonitis.

**Methods:** This is an experimental study with a post-test only control group design. Twenty-four Wistar rat was randomly divided into 4 groups (6 rats/group). The first group (C) was a control group, the second group (P) was induced by peritonitis, the third group (P+Cef) was peritonitis-induced groups, given Ceftriaxon injection as therapy, and the fourth group (P+Cef+Glu) was peritonitis-induced groups, given Ceftriaxon injection and Glutathione as adjuvant therapy. After 24 hours, blood samples were taken for examination of NO and MDA levels. Data is considered significant if the p-value <0.05.

**Results:** There was significant increase of NO level from Group 2 to Group 4 (p<0.05). There were no significant differences between MDA levels groups (p>0.05).

**Conclusion:** Glutathione as adjuvant therapy is not effective to reduce NO and MDA levels in peritonitis.

**Keywords:** glutathione, peritonitis, nitric oxide, malondialdehyde.

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**Giant scalp hemangioma: propanolol medication prior to definitive delayed surgical treatment**

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Hemangiomas of infancy (HOI) are common, benign, and self-limited tumors, but a significant percent of these lesions are associated with substantial morbidity in infancy and childhood. Tumors that often require treatment include those involving the periorbital area, midfacial area, airway, skin folds, and anogenital area, where sites are at high risk for ulceration, dysfunction, or destruction. However, there is currently no well-studied or FDA-approved for systemic therapy HOI. While alternative treatments for HOI include systemic corticosteroids, vincristine, interferon alpha, cyclophosphamide, and others therapies that carry significant risks, still alarming for use in clinical treatment. Recently, an infant small case series with HOI documented a dramatic improvement following treatment with oral propranolol. The objective of this clinical case report is to delay surgical excision as definitive therapy with propranolol as alternative treatment. A 12 days old infant with risk for ulceration and rupture hemangioma at her head, have to delay her surgical excision cause need to wait for the rule of ten to be achieved. So patients have to take propranolol as alternative treatment until the rule of ten was achieved. But the patient still need to be evaluated and monitored periodically as precaution for risk of hemangioma rupture which lead to intracranial expose.

**Keywords:** hemangioma, flap

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**Sleeve gastrectomy and pancreas omentoplasty improved β cell insulin expression and Interleukin-1β (IL-1β) serum level in non-obese diabetes mellitus rat**

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**Background:** Peritonitis is the second most common cause of severe sepsis that associated with a significant mortality rate. Due to a large gap of newer antibiotics innovation and antibiotic resistance emergence, the best possible use of the available therapeutic resources is very important for management of peritonitis. It has been studied that glutathione is an alternative in the development of new anti-inflammatory agents. Thus, the aim of this study was to evaluate the levels of TNF- Alfa and IL-10 as the effect of glutathione administration as adjuvant therapy in rat peritonitis model.

**Materials and Methods:** Male Wistar rats were divided into four groups (n=6 per group), Group 1: control group (C), Group 2: peritonitis group (P), Group 3: peritonitis + Ceftriaxone group (P + Cef), Group 4: peritonitis + Ceftriaxone + Glutathione group (P + Cef + Glu). Twenty-four hours after peritonitis induction, the blood samples were taken to evaluate TNF- Alfa and IL-10 levels.

**Results:** There was a significantly increase of mean TNF- Alfa level in group 2 (P) 473.86±388.99 pg/ml (p-value=0.00) and significantly decrease of mean TNF-Alfa level after glutathione injection in group 4 (P+Cef+Glu) (p-value=0.02). No significant changes in IL-10 levels in rats peritonitis model.

**Conclusions:** Glutathione supplementation is significantly decrease the mean level of TNF- Alfa in rats induced peritonitis, however there is no difference compare to antibiotic only. Moreover, there no significant changes level of IL-10 in rats-induced peritonitis after glutathione injection.

**Keywords:** glutathione, TNF- Alfa, IL-10, rat, peritonitis.
ABSTRACT

A 59-year-old man presented paraplegia of both lower limbs. The patient complained hard to walk since 9 months before being admitted to the hospital. The patient also complained hard to move his legs, burn pain sensation, painful and numbness sensation that radiates from chest region to the tips of both toes, he felt that his chest feel like being tied, and he complained hard to breathe when he feels pain. Complaints are getting worse until the patient was unable to walk. From the MRI, we found an intra-dural extramedullary lesion, that was suspicious of a nerve cell sheath tumor. Then the patient underwent surgical treatment for tumor removal with an endoscopic technique, the tumor was entirely removed by endoscopic techniques surgery. From the histopathology the tumor was a neurofibroma tumor.

Conclusion: Neurofibroma is one of the most frequently intradural extramedullary spinal tumor. Good imaging can guide the diagnosis and a good plan for manage patients with spinal tumors. Complete tumor resection provides a better prognosis in patients with neurofibromas. With endoscopic techniques, total spinal tumor removal surgery can be performed. The surgical technique for spinal tumors using an endoscopic approach may be an option for patients with spinal neurofibromas.

Keywords: endoscopic spine surgery, spinal neurofibroma.

Seizure free status as a good predictor for quality of life of temporal lobe epilepsy patients after amygdalohippocampectomy

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Background: Epilepsy surgery is a choice of treatment for epilepsy patients who are resistant to anti-epileptic drugs. Epilepsy surgery is successful if the patient’s quality of life improved or better than before surgery and it can reduce seizure frequency.

Aim: Prove the existence of differences in quality of life between seizure-free patients and non-seizure-free temporal lobe epilepsy patients after amygdalohippocampectomy.

Methods: This study is an observational study using a Cross-Sectional design. The quality of life was assessed using the QOLIE-31 questionnaire, while the patient’s seizure-free condition was identified from their medical records. Subsequently, the quality of life of seizure-free temporal lobe epilepsy patients was compared with the non-seizure-free patients after amygdalohippocampectomy. The statistical tests used were unpaired t-test if the data were distributed normally and the Mann-Whitney test if the data were not distributed normally.
ABSTRACT

Results: From total 31 patients, 21 were seizure-free (Engel 1) and 10 were non-seizure-free (Engel 2, 3, and 4), who have met the inclusion and exclusion criteria were analyzed. The results of the statistical analysis indicated the seizure worry $p = 0.003$, overall QOL $p = 0.001$, emotional well-being $p <0.001$, energy/fatigue $p <0.001$, cognitive $p = 0.002$, medication Effects $p = 0.01$, Social function $p <0.001$. Thus, there were significant differences in quality of life between the seizure-free temporal lobe epilepsy patients and non-seizure-free patients.

Conclusion: The quality of life of seizure-free temporal lobe epilepsy patients was significantly higher than those who were not seizure-free after amygdalohippocampectomy

Keywords: Quality of life, QOLIE-31, seizure-free, temporal lobe epilepsy, amygdalohippocampectomy.

18. COVID-19

Case report: intravenous therapeutic unfractionated heparin in acute respiratory distress syndrome Covid-19 patient

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Introduction: Coronavirus disease 2019 (COVID-19), first reported in December 2019 in Wuhan, is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that spread more rapidly in human population and soon become a pandemic infection across the world. Most of cases that lead to death were reported with a coagulopathy and disseminated intravascular coagulation (DIC) complication.

Case presentation: A confirmed COVID-19 case of a 55 years old female is presented with comorbidity of heart failure, atrial fibrillation, diabetes, and obesity treated with unfractionated heparin and good outcome result in ICU setting. We use the therapeutic dose (18units/kgBb/hr IV) for the patient who is then discharged from the ICU and moved to the isolation ward after showing a great improvement on the 15th day of treatment.

Conclusion: Patients with progressive, severe COVID-19 infection with ARDS were found with very high D-dimer and fibrinogen levels, leading to a hypercoagulable state. In particular, markedly elevated D-dimer has been detected and associated with higher intensive care unit (ICU) admission and mortality, likely reflecting coagulation activation, cytokine storm development, and organ failure. The use of anticoagulants, in particular heparin, is recommended by expert consensus for patients with severe COVID-19, although a final guidance cannot be implemented yet. Temporarily, we can use the therapeutic dose of unfractionated heparin that has made a good outcome, but more clinical trials are necessary to confirm the observation of the good result from our case.

Keywords: Covid-19, respiratory distress, unfractionated heparin.
Neurogenic pulmonary edema in ruptured intracranial aneurysm: a disconcerting management in pandemic era

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Background: Ruptured intracranial aneurysm causing subarachnoid hemorrhage counted as high as eight per 100000 population. The natural history of aneurysmal-Subarachnoid Hemorrhage (aSAH) including its in-hospital complication will lead to a catastrophic clinical condition of the patients. Neurogenic pulmonary Edema (NPE) has been a challenging yet devastating complication. Management of NPE as a respiratory abnormality caused by aSAH in pandemic era is somehow disconcerting with the manifestation of Covid-19 infection. This study was aimed to identify whether an NPE should be considered as COVID-19 suspicious case.

Methods: We retrospectively analyzed medical record data of patient with NPE during the era of pandemic between February – July 2020. Literature review was done to elaborate the connection of these two different yet overlapping entities.

Results: We identified four patients with aneurysmal-related NPE during the pandemic. All of them were priorly suspected as COVID-19 infection and managed with the appropriate COVID-19 protocol. All of them were tested PCR and none of the patients were positive. However, due to its severity, three of the patients were died because if severe respiratory distress, while one was survived. Among three, two were died before definitive treatment. All patients have remarkably elevated white blood cell and pneumonia on chest X-Ray.

Conclusion: We conclude that all NPE patients were not diagnosed with COVID-19. In this pandemic era, we suggest a comprehensive and multidisciplinary protocol to distinguish between NPE and COVID-19. Not only to shorten the medical protocol but also to achieve best outcome of the patients.

Keywords: aneurysm, NPE, COVID-19.
The differences of lactate dehydrogenase (LDH) levels and activin A levels among major thalassemia and non-thalassemia

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**Background:** Indonesia is a part of the global thalassemia belt, with major thalassemia prevalence that increase every year. Ineffective erythropoiesis (IE) is a condition that is commonly found in major thalassemia. An increase in LDH levels and Activin A levels was found in major thalassemia patient, that is caused by ineffective erythropoiesis (IE) and other factors. However until now, there exists no studies that compare LDH levels and Activin A levels in major thalassemia patient in Dr. R. Soedjati Grobogan Public Hospital and Dr. R. Soetrasno Rembang Public Hospital, and 25 healthy population with equivalent age. LDH levels were measured using photometry and Activin A levels were measured using ELISA. Differences between LDH levels and Activin A levels in major thalassemia and non-thalassemia were analyzed using Independent Sample T test and Mann-Whitney test, which p<0.05 was considered significant.

**Methods:** An observational analytical study that implement cross sectional design was conducted in March – September 2020, which consist of 25 routinely transfuse major thalassemia patient in Dr. R. Soedjati Grobogan Public Hospital and Dr. R. Soetrasno Rembang Public Hospital, and 25 healthy population with equivalent age. LDH levels and Activin A levels were measured using photometry and Activin A levels were measured using ELISA. Differences between LDH levels and Activin A levels in major thalassemia and non-thalassemia were analyzed using Independent Sample T test, which p<0.05 was considered significant.

**Result:** There exist a significant difference (p<0.001) between LDH levels in major thalassemia (524.48 ± 167.44 U/L) and non-thalassemia (294.48 ± 131.24 U/L). There exist a significant difference (p = 0.042) between Activin A levels in major thalassemia (118.75 ± 45.47 pg/ml) and non-thalassemia (95.66 ± 26.26 pg/ml).

**Conclusion:** There were significant differences in LDH levels and Activin A levels among major thalassemia and non-thalassemia.

**Keywords:** LDH, activin a, major thalassemia, ineffective erythropoiesis.