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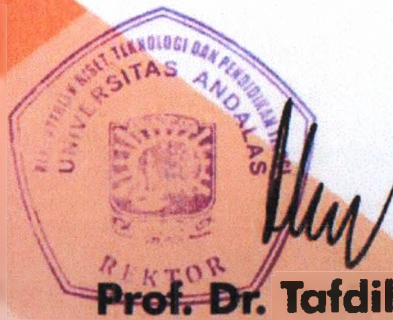
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as,

**ORAL PRESENTER**

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Mercure Hotel Padang, West Sumatra



**Prof. Dr. Tafdil Husni, SE, MBA**

Rector of Andalas University



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Head Committee

# COMPARISON OF PLATELETIC REACTIVITY EFFECTS BETWEEN TICAGRELOR AND CLOPIDOGREL IN ACUTE MYOCARDIAL INFARCTION PATIENTS WHICH DRIVE CORONER INTERVENTION

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## ABSTRACT

### Introduction

This study aimed to determine the effect of P2Y12 inhibition by ticagrelor and clopidogrel and its effect on Major Adverse Cardiovascular Events (MACE) of patients with Acute Myocardial Infarction who underwent Percutaneous Coronary Intervention at Dr. M. Djamil General Hospital Padang

### Method

The design in this study was a quasi experimental. The study was conducted at Dr. M. Djamil General Hospital Padang and the Department of Pharmacology and Therapeutics Faculty of Medicine Universitas Andalas in August - December 2016. The population in this study were acute coronary syndrome patients who were treated in the Department of Cardiology of Dr. M. Djamil General Hospital Padang and underwent Percutaneous Coronary Intervention. The sample in this study were 32 samples with details of 16 samples for each group given platelets between ticagrelor and clopidogrel ( $n = 1$ ) in patients with acute myocardial infarction who underwent percutaneous coronary intervention. Examination of platelet inhibition activity was carried out using the VerifyNow® P2Y12 assay (Accumetrics, San Diego, CA, USA) and conducted at the Central Laboratory of Dr. M. Djamil General Hospital Padang. VerifyNow® tests adenosine diphosphate-induced platelet function and is reported in the P2Y12 Reactions Unit (PRU) unit. The relationship between the Platelet Reaction Unit (PRU) value above or below the cut-off with the occurrence of MACE through the chi-square test. A two-tailed  $P$ -value of  $<0.05$  was considered statistically significant. Data analysis was carried out in Stata version 14.2 (Stata Corporation).

### Results

The results showed that administration of antiplatelet with clopidogrel obtained non-responsive platelet reaction unit (PRU) of 33.3% and hyperresponsiveness of 66.7% whereas in non-responsive ticagrelol found non-responsive PRU and experienced 100% hyperresponsiveness. PRU with clopidogrel  $128.1 \pm 99.6$  and ticagrelol  $21.6 \pm 34.59$ . Statistical test results obtained  $p$  value = 0.001 ( $p$  value  $<0.05$ ) it can be concluded that there are differences in PRU with clopidogrel and ticagrelol in patients with Acute Myocardial Infarction.

### Conclusion

There are differences in PRU with clopidogrel and ticagrelol in patients with Acute Myocardial Infarction.

**Keywords:** Clopidogrel, acute myocardial infarction, ticagrelor



## **1. Introduction**

Coronary heart disease (CHD) is still one of the biggest problems in health problems. WHO states that ischemic heart disease causes more than 7 million (12.8%) deaths worldwide. Data from the United States (US), CHD is the cause of one in every 6 deaths in 2009, based on data from the American Heart Association (AHA). The percentage of CHD patients in the US who died before receiving treatment was 73% in 2009 [1,2].

Dual antiplatelet therapy with aspirin and clopidogrel has been the main pillar in the management of coronary heart disease, especially Acute Myocardial Infarction (AMI) and patients undergoing Percutaneous Coronary Intervention (PCI), with its role especially in the prevention of stent thrombosis after PCI. But, the recurrence rate for ischemic events remains high. The recurrence rate of ischemic events within 1 year after AMI in patients receiving combination therapy with aspirin and clopidogrel reached 10%, with the incidence of stent thrombosis reaching 2%. This residual risk is thought to be partly due to suboptimal platelet inhibition due to inadequate response to clopidogrel. Pharmacodynamic and pharmacokinetic studies of clopidogrel have found interindividual variations in the antiplatelet response of clopidogrel and an increased risk of ischemic and hyporesponder. This is thought to cause high platelet reactivity (HRPR) or high on-treatment platelet reactivity (HTPR). HPR is defined as the high rate of platelet reactivity several hours after obtaining a loading dose from an antiplatelet agent. The higher the residual platelet reactivity the higher the risk of cardiovascular events. Several studies have found a correlation between gene polymorphisms and active metabolite variability and clinical efficacy of clopidogrel [3,4].

The importance of clopidogrel's role in AMI and PCI management, many parties are trying to find out how to integrate the data that has been obtained in relation to patient management. These efforts are carried out in order to identify patients at risk of developing cardiovascular events in relation to clopidogrel, obtain a more accurate estimate of the prognosis and adjustments of patient management based on the personal needs of each individual [5].

In order to overcome this problem, examinations to assess an individual's response to antiplatelet are being studied. These examinations, which aim to assess platelet inhibitory function and platelet reactivity, aim to identify individuals who are non-responders and adjust patient management based on individual circumstances. Several strategies have been tested in the management of individuals with non-responders to clopidogrel, including adjusting clopidogrel loading doses, using the newer generation prodrug thienopyridine groups such as prasugrel, or using new P2Y<sub>12</sub> antagonists such as ticagrelor, in patients suspected of being hyporesponse to clopidogrel. Ticagrelor works directly as P2Y<sub>12</sub> adenosine diphosphate receptor antagonists and does not require metabolic activation, so it is less affected by genetic polymorphisms and certain drugs such as proton pump inhibitors. Ticagrelor is considered to provide P2Y<sub>12</sub> inhibitory effects that are faster, stronger, and more consistent than clopidogrel. However, the effect of ticagrelor compared to clopidogrel in its function for P2Y<sub>12</sub> inhibition and comparison of the efficacy and safety of the two drugs, especially in Indonesia, is still not widely performed [4,6,7].

## **2. Methods**

### **2.1 Study design, research sample**

The design in this study is a quasi-experimental. The study was conducted at Dr. M. Djamil General Hospital Padang and the Department of Pharmacology and Therapeutics Faculty of Medicine Universitas Andalas in August - December 2016. The population in this study were acute coronary syndrome patients who were treated in the Cardiology Department Dr. M. Djamil General Hospital and underwent Percutaneous Coronary Intervention. The sample criteria in this study were 32 samples with 16 samples for each group given platelets between ticagrelor and clopidogrel in patients with acute myocardial infarction who underwent

percutaneous coronary intervention. The inclusion criteria of the study sample were patients with a diagnosis of acute myocardial infarction, male, nonpregnant woman, age  $\geq 18$  years or  $\leq 65$  years, pregnant woman, no liver function impairment, creatinine clearance  $<30$  ml / min, a patient receiving clopidogrel therapy or ticagrelor and undergo percutaneous coronary intervention therapy. Exclusion criteria were patients who were on treatment using clopidogrel or ticagrelor and getting clopidogrel or ticagrelor therapy within 5 days before entering the study.

### **2.2 Examination of platelet reactivity**

Examination of platelet inhibition activity was carried out using the VerifyNow® P2Y12 assay (Accumetrics, San Diego, CA, USA) and conducted at the Central Laboratory of Dr. M. Djamil General Hospital. VerifyNow® tests adenosine diphosphate-induced platelet function and is reported in the P2Y12 Reactions Unit. Patients are categorized as HRP or nonresponsive if the examination value is  $\geq 208$  PRU, and overresponsive if the examination value is  $<90$  PRU.

### **2.3 Operational definition**

Acute myocardial infarction is a diagnosis of acute myocardial infarction established by finding an increase and/or decrease in the value of cardiac markers, with at least 1 examination exceeding the 99th percentile of the upper limit of reference and at least one of the ischemic symptoms, ST-T segment changes or left branch bundle block new or suspected new 12-lead ECG examination, appearance of pathological Q waves on an electrocardiogram (EKG), evidence of new viable or suspected myocardial loss based on imaging and intracoronary thrombus found during angiography or autopsy [3,8,9].

Platelet reactivity is an examination of platelet inhibition activity using the VerifyNow® P2Y12 assay. Patients are categorized as HRP or nonresponsive if the examination value is  $\geq 208$  PRU, and overresponsive if the examination value is  $<90$  PRU.

Major Adverse Cardiovascular Events (MACE) is a combination of cardiovascular death, nonfatal myocardial infarction, and nonfatal ischemic stroke. For the purpose of this report, efficacy results including MACE are deaths that occur during patients treated at Dr.M. Djamil General Hospital.

### **2.4 Data collection technique**

Data were collected from medical records of all outpatients and inpatients of the Cardiology and Vascular Medicine Division of Dr. M Djamil General Hospital who received clopidogrel and ticagrelor therapy who underwent PCI. From the medical records of the patients, data were collected including demographic characteristics/ data (name, age, gender, weight, a medical record number, CHD risk factors), history results, physical examination results, results of initial laboratory examination, diagnosis, and treatment of patients. The data above is used for selecting research subjects. Data regarding PRU values were obtained by examinations conducted at the Laboratory of Dr. M. Djamil General Hospital Padang. Examination of platelet reactivity is carried out using a patient's blood sample. Blood samples were taken in patients who had used clopidogrel and ticagrelor loading dose and performed PCI action. Blood samples are taken at 6-12 hours after loading dose and 30 days after PCI action. Blood samples are immediately checked using the VerifyNow® tool within 4 hours of taking blood.

### **2.5 Data analysis**

Basic characteristics data will be presented with descriptive statistics. The relationship between PRU values above or below the cut-off with the occurrence of MACE through the chi-square test. The results are considered meaningful if the value of  $P < 0.05$ . Quantitative data that has been collected is processed and analyzed using the standard version 14.2 program

### 3. Results

Characteristics of subjects (Table 1).

**Table 1.** Characteristics of research subjects

Parameter	f(%)/ mean±SD
Age (years)	56,38 ± 7,44
Sex (male)	29 (90,6%)
Diagnosis	
IMA-EST	23 (71,9 %)
IMA-NEST	9 (28,1 %)
Risk factors	
Hypertension	17 (53,1 %)
Diabetes mellitus	10 (31,3 %)
Smoking	25 (78,1 %)
Dyslipidemia	16 (50 %)
Obesity	19 (59,4 %)
Family history	3 (9,4 %)
Menopause	3 (9,4 %)

Table 1 of the known risk factors in the clopidogrel and ticagrelor groups was found to be older in the ticagrelor group compared to the clopidogrel group, as well as a higher diagnosis of IMA-EST than the diagnosis of IMA-NEST in the clopidogrel group compared with ticagrelor. As for other risk factors, there were no differences in other cardiovascular risk factors between clopidogrel and ticagrelor groups. The difference between clopidogrel and ticagrelor groups (Table 2).

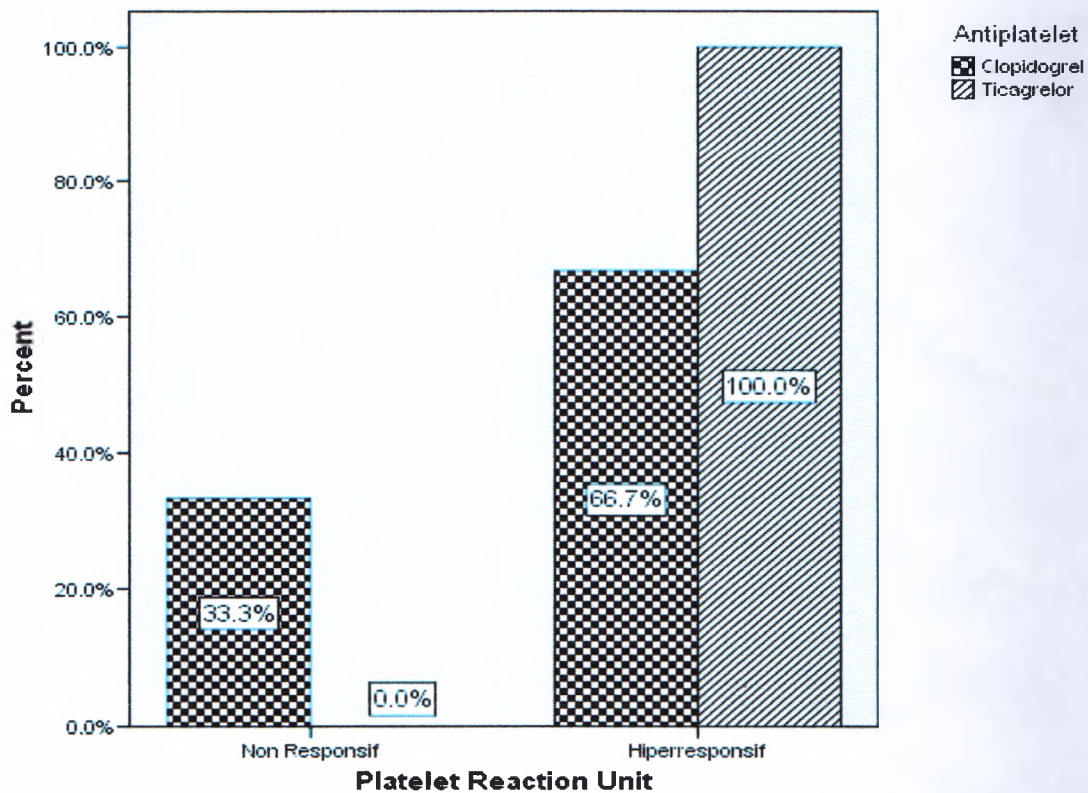
**Table 2.** Characteristics of risk factors for clopidogrel and ticagrelor groups

Parameter	Clopidogrel	Ticagrelor	p-value
Age (years)	53,53 ± 6,52	58,88 ± 7,46	0,040*
Sex (male)	15 (100 %)	14 (82,4%)	0,229
Diagnosis			
IMA-EST	14 (93,3 %)	9 (52,9 %)	0,014*
IMA-NEST	1 (6,7 %)	8 (47,1 %)	
Risk factors			
Hypertension	9 (60,0 %)	8 (47,1 %)	0,464
Diabetes mellitus	5 (33,3 %)	5 (29,4 %)	0,811
Smoking	12 (80,0 %)	13 (76,5 %)	1,000
Dyslipidemia	7 (46,7 %)	9 (52,9 %)	0,723
Obesity	10 (66,7 %)	9 (52,9 %)	0,430
Family history	2 (13,3 %)	1 (5,9 %)	0,589
Menopause	0 (0 %)	3 (17,6 %)	0,229

\*P<0.05 significant

Table 2 shows that there were differences in age, diagnosis in the clopidogrel and ticagrelor groups (p-value <0.05). There were no sex differences, risk factors for hypertension, diabetes mellitus, smokers, dyslipidemia, obesity, family history and menopause in the clopidogrel and ticagrelor groups (p value > 0.05). PRU images in AMI patients (Figure 1).





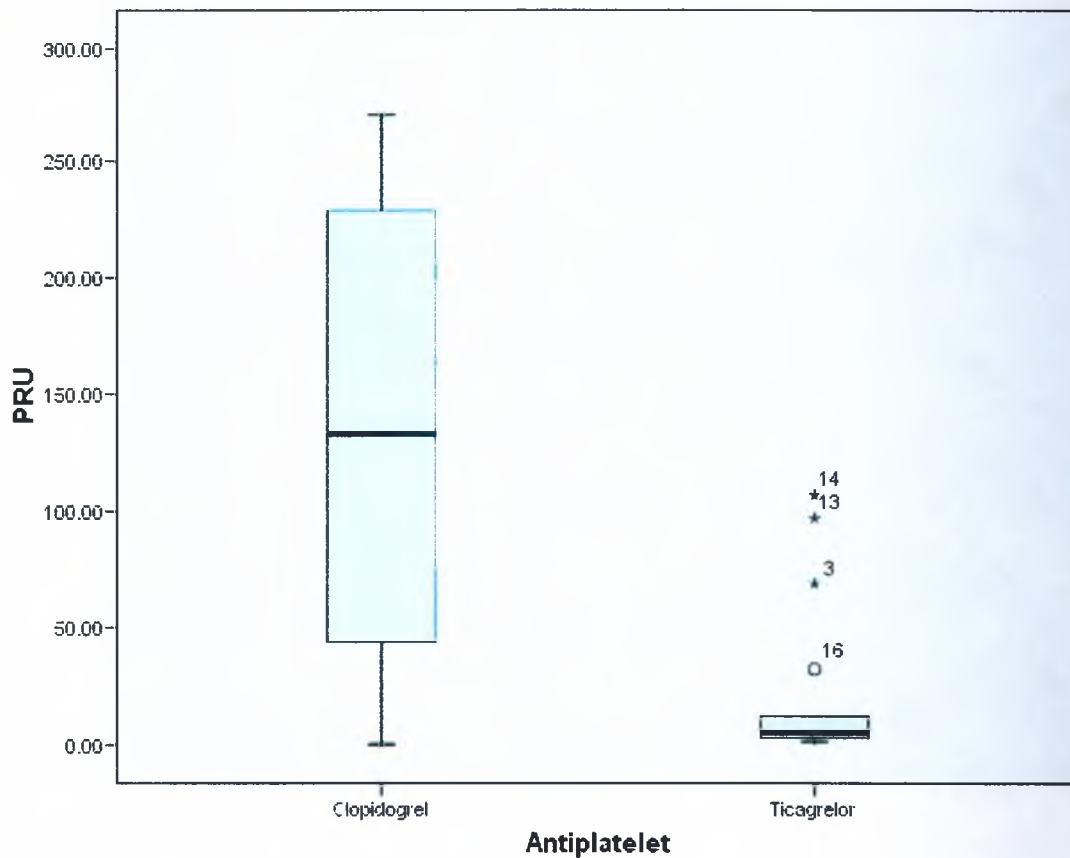
**Figure 1.** Overview of Platelet Reaction Unit (PRU) in patients with Acute Myocardial Infarction (AMI)

Figure 1 shows that the administration of antiplatelet with clopidogrel obtained non-responsive platelet reaction unit (PRU) of 33.3% and hyperresponsiveness of 66.7% whereas in non-responsive ticagrelor found non-responsive PRU and experienced hyperresponsiveness of 100%.

**Table 3.** Differences in Platelet Reaction Unit (PRU) with Clopidogrel and Ticagrelol in patients with Acute Myocardial Infarction (AMI)

Antiplatelet	n	Mean $\pm$ SD	95% CI	p value
Clopidogrel	16	128,1 $\pm$ 99,6	49,4-163,6	0,001
Ticagrelol	16	21,6 $\pm$ 34,59		

Table 3 shows platelet reaction unit (PRU) with clopidogrel which is  $128.1 \pm 99.6$  and ticagrelol is  $21.6 \pm 34.59$ . Statistical test results obtained  $p = 0.001$  ( $p < 0.05$ ) it can be concluded that there are platelet reaction unit differences with clopidogrel and ticagrelol in patients with Acute Myocardial Infarction (AMI).



**Figure 2.** Box Plot of the Platelet Reaction Unit (PRU) Plot for patients with Acute Myocardial Infarction (AMI)

#### 4. Discussion

In this study, there were no major cardiovascular events in both anti-platelet groups either clopidogrel or ticagrelor. Based on data on the basic characteristics and risk factors of subjects in this study it was found that AMI was found in many men, as well as the large proportion of patients with smoking, obesity, hypertension, and dyslipidemia.

Cigarettes, obesity, hypertension, and dyslipidemia are traditional cardiovascular risk factors. Smoking is associated with an increase in deaths from coronary heart disease through the mechanism of vascular endothelial injury due to cigarette smoke and a higher increase in myocardial oxygen demand in someone who smokes. Obesity is associated with an increased risk of hypertension, more blood vessel stiffness and a tendency to accumulate fat in the vascular endothelium which is all at risk for coronary heart disease. Hypertension is an independent risk factor for coronary heart disease that is associated with the incidence of vascular endothelial injury resulting in atherosclerotic plaque. While dyslipidemia, with the presence of endothelial injury that has occurred in the blood vessel wall, will accelerate the accumulation of fat in the lumen of blood vessels and result in atherosclerotic plaque.

The study found that patients who received clopidogrel therapy tended to be younger and had a greater diagnosis of IMA-EST compared to the group of patients who received ticagrelor. The choice of anti platelet therapy in this study was discretion from the physician in charge of

the patient, so the absence of clear randomization of the choice of anti platelet therapy might result in differences in the basic characteristics between patients who received clopidogrel compared with those who received ticagrelor. Differences in these basic characteristics may result in differences in major cardiovascular events between two anti-platelet groups.

In this study, it was found that the PRU levels of patients who received ticagrelor were all at the responsive level, while in the clopidogrel group there were 5 people who were at the hyporesponsive level. Clopidogrel is a second generation thienopyridine in the form of prodrug and requires complex enteric and metabolism by cytochrome P450 (CYP) enzymes in the liver. In addition, the change of clopidogrel becomes active metabolically through a two-step process, namely the formation of 2-oxo-clopidogrel with the main role in the enzyme CYP2C19. The presence of the polymorphism of the CYP gene and the longer process that clopidogrel passes as a prodrug to become active causes the hyporesponse to occur in PRU measurements.

Ticagrelor is a class of oral P2Y receptor antagonists that reversibly inhibits platelets, which do not require liver bioactivation because they are active drugs. Antiplatelet ticagrelor activity is obtained through extracellular structural changes with allosteric modulation so that it binds to receptors independently of ADP and inhibits changes in conformation. This class of drugs ensures that anti-platelet activity is relatively more stable and inhibition of platelet reactivity is better than other drugs. In this study found a normal anti-platelet response in ticagrelor and the presence of hyporesponse to clopidogrel.

In this study, there were no major cardiovascular events within 30 days after treatment. The short period of monitoring after myocardial infarction and the relatively small number of samples made the absence of major cardiovascular events observed within 30 days after treatment.

Limitations of this study are the short period of monitoring after myocardial infarction because major cardiovascular events after myocardial infarction often occur within 1 year after the occurrence of myocardial infarction so that no major cardiovascular events can be detected within 30 days of monitoring.

#### **Conflict of interest**

The authors declare no conflict of interest.

#### **Acknowledgments**

We would like to thank the Faculty of Medicine, Universitas Andalas for funding this research project and special thank to all respondents who participated in this study.

#### **References**

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## TIME SCHEDULE OF ORAL PRESENTATION

ICOMHer 2018

Day 1, November 13th of 2018 (14.00 - 18.00 WIB)

Group 1			
No.	Kode Artikel	Author	Judul Artikel
1	ICH-001	Abdah Mc Akim	Learning Assessment on Nursing Students in Unversiti Putra Malaysia using Constructivist On-Line Learning Environment Survey (COLLES)
2	ICH-002	Adrial	PARASITEMIA DENSITY OF WHITE MICE VACCINATED OF <i>Anopheles sudaicus</i> SALIVARY GLAND EXTRACT AND <i>Plasmodium berghei</i> INFECTED AS A MODEL IN FIGHTING MALARIA
3	ICH-003	Afriwardi	THE RELATIONSHIP BETWEEN MACRONUTRIENT INTAKE AND PHYSICAL ACTIVITY WITH PLASMA SOD ACTIVITY : BASED ON PLASMA MDA LEVEL OF MINANGKABAU ETHNICITY MEN, IN WEST SUMATERA, INDONESIA
4	ICH-004	Aisyah Elliyanti	Natriumiodide Symporter Expression in Thyroid Tumor Patients In Padang City
5	ICH-005	Alvarino	NANO CURCUMIN EFFECT FOR KIDNEY FIBROTIC CAUSED BY UNILATERAL URETER OBSTRUCTION BASED ON EXPRESSION MATRIX METALLOPROTEINASE-9 An experimental study on rat
6	ICH-006	Amel Yanis	Effects of Enrichment on Autistic Behavior, Neuroligin 1 and Neurexin 1 Protein Expressions In Prefrontal Cortex Region Valproic Acid-Induced Rats
7	ICH-007	Amirah Z. Izzah	ASSOCIATION OF ANGIOPEPTIN-2 GENE POLYMORPHISM WITH DENGUE VIRUS INFECTION SEVERITY IN CHILDREN
8	ICH-008	Ani Laila	Effect of Oxytocin massage, Endorphin massage and Rosewater decoction on breast milk production in postpartum mother
9	ICH-009	Arizal Rahman	The Impact of Socioeconomic Factors In Retinoblastoma
10	ICH-010	Arina Widya M	Analysis of Plasma Cortisol Level and Salivary Cortisol Level in Chronic Kidney Disease Patients with Depression
11	ICH-011	Arina Widya M	Analysis of Correlation between Interleukin-6 Gastric Mucosa with Plasma Cortisol Level in Functional Dyspepsia with Psychological Stress
12	ICH-012	Arni Amir	THE EFFECTS OF BISPHENOL-A DISSOLVED EXPOSURE TO THE GENE EXPRESSION OF BRCA2 IN RATTUS NOVERGICUS, WISTAR ALBINO STRAIN
13	ICH-013	Aswiyanti Asri	Immunoeexpression of PAX8 and Mutant p53 in Serous Epithelial Ovarian Carcinoma - Correlation with Lymphovascular Invasion
14	ICH-014	Azrimaidaliza	Contribution of Fast Food Consumption on Incidence Early Puberty Among Adolescent Girls
15	ICH-015	Azrimaidaliza	NUTRITIONAL STATUS BEFORE PREGNANCY, MATERNAL WEIGHT GAIN AND BIRTH WEIGHT: EVIDENCE BASED OF COHORT STUDY
16	ICH-016	Bina Diana	RELATIONSHIP BETWEEN LEPTIN LEVELS AND LIPID PROFILE IN OBESITY ADULT IN PUSKESMAS NANGGALO PADANG WORKING AREA
17	ICH-017	Bunga Permata W	Delphi Technique Implementation In Developing Advance Practice Community Health Nursing Curriculum

Group 2			
No.	Kode Artikel	Author	Judul Artikel
1	ICH-018	Cicilia Artita	MEASUREMENT OF RADIATION DOSAGE IN THYROID AND EYES ORGANS IN FLUOROSCOPY EXAMINATION
2	ICH-019	Deka Viotra K	Comparison of Arterial Stiffness between CAPD Patients and Hemodialysis Twice a Week
3	ICH-020	Desay Arisanty	Relationship of RhoC gene expression and PI3K gene as the work path of miR10b in breast cancer invasion
4	ICH-021	Deswita	Health education with comic media on students' knowledge and attitudes about dengue fever in the secondary public school in Paclang city
5	ICH-022	Dewi Eka Putri	QUALITATIVE STUDY ON EXPERIENCES AND NEEDS OF CAREGIVERS OF PATIENTS WITH SCHIZOPHRENIA
6	ICH-023	Dewi Yudianta Shinta	Test of Antibacterial Bioactivity of Pure Compounds from Endophytic Fungus <i>Sporothrix Sp</i> Against Bacteria <i>Escherichia coli</i> and <i>Staphylococcus aureus</i>
7	ICH-024	Dian Pertiwi	THE CORRELATION OF SERUM HOMOCYSTEINE AND PYRIDOXINE LEVELS IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION
8	ICH-025	Dien Gusti AN	Implementation of Patient Safety In The Ibu Community Health Center Payakumbuh City
9	ICH-026	Dinda Aprilia	Correlation between Blood Glucose Control and Oxidative Stress with Urine Nefrin Levels in Diabetes Mellitus Type 2 Patients
10	ICH-027	Dita Hasni	Overview of Smoking Degrees Patients with COPD In Padang
11	ICH-028	Dwi Novrianda	Developments of Evidence-Based Practice Education Module in Nurse Managers in West Sumatera, Indonesia
12	ICH-029	Effy Huriyati	Correlation of Inflammation Mediator Expression Between Tissues and Mucosal in Chronic Rhinosinusitis with Nasal Polyp
13	ICH-030	Elizabeth Bahar	Application of Nano Particle Gold (Au-NP) to Improve the Loop Mediated Isothermal Application (LAMP) value of the MPB64 (Rv3036c) as Quick Diagnosis of Mycobacterium tuberculosis Infection
14	ICH-031	Elizabeth Bahar	Optimizing Specific Primer Design for MPB64 In Mycobacterium tuberculosis as a Rapid Diagnosis Candidate for Pulmonary Tuberculosis
15	ICH-032	Ely Usman	Comparison of Platelet Reactivity Effects Between Ticagrelor and Clopidogrel In Acute Myocardial Infarction Patients Which Drive Coronary Intervention



16	ICH-033	Ennesta Asri	CORRELATION BETWEEN HOMOCYSTEINE AND VITAMIN B12 SERUM LEVEL WITH VITILIGO SEVERITY
17	ICH-034	Eryati Darwin	Relationship Between Stress and Serotonin Transporter Level With Internet Addiction In Adolescent

Group 3			
No.	Kode Artikel	Author	Judul Artikel
1	ICH-035	Esi Afriyanti	The Effect of Spiritual Emotional Freedom Technique (SEFT) on the Self Concept of Breast Cancer Patients with Mastectomy
2	ICH-036	Etriyel Myh	THE ROLE OF MATRIX METALLOPROTEINASE-1 AND TISSUE INHIBITORY MATRIX METALLOPROTEINASES-3 IN THE CASE OF BLADDER NECK CONTRACTURE POST TRANSURETHRAL RESECTION OF PROSTATE
3	ICH-037	Eva Chundrayetti	ASSOCIATION BETWEEN THE SNP rs2154545 POLYMORPHISM ON THE DYRK1A GENE AND INTELLECTUAL DISABILITY IN DOWN SYNDROME
4	ICH-038	Eva Decroll	DESCRIPTION OF INSULIN RESISTANCE AND BETA CELL PANCREAS DYSFUNCTION IN PREDIABETIC PATIENTS
5	ICH-039	Faradilla	Medium Chain Triglycerides Reduces Levels of $\alpha\beta$ -42 In Sprague Dawley with Cognitive Function Impairment
6	ICH-040	Faradilla	Medium Chain Triglycerides (MCT) Improves Percentage of Spontaneous Alternation In Sprague Dawley with Cognitive Function Impairment
7	ICH-041	Febrian	Unit Cost Calculation on Dental Primary Health Service: A Case Study at Fitria Dental Clinic, Padang City, West Sumatera, Indonesia
8	ICH-042	Fika Tri A	Measuring the Nonlinear Dynamics of Global Cerebral Ischemia
9	ICH-043	Finny Fitri Y	Prevalence and Risk Factors of Asthma in Children Aged 6-7 Years and 13-14 Years Based Questionnaire International Study of Asthma and Allergies in Childhood (ISAAC) in Padang
10	ICH-044	Fitra Yeni	Peer Assisted Learning As Optional Learning Method In Achieving Nursing Student Family-Focused Care Competencies
11	ICH-045	Gardenia Akhyar	THE CORRELATION OF DERMATOGLYPHIC PATTERN AND IMMUNOGLOBULIN-E (Ig-E) LEVELS IN PEOPLE WITH ATOPIC STIGMATA
12	ICH-046	Gestina Aliska	Evaluation of Oral Anticoagulant Use in Atrial Fibrillation Patients
13	ICH-047	Gladys D Siregar	The Sociodemographic and Knowledge on HIV Testing Of Pregnant Women At Andalas Public Health Center
14	ICH-048	Gusti Sumarsih	Web Based Intervention Strategy Improve High Risk Population Self Efficacy In Serostatus Check
15	ICH-050	Hardisman Dasman	Sexual Risk Behaviour of Men Who Have Sex with Men In an Urban Society of West Sumatera Province of Indonesia
16	ICH-051	Hasmiwati	Genetic variation and genetic structure of <i>Aedes aegypti</i> population Dengue Hemorrhagic Fever (DHF) vector in West Sumatra

Group 4			
No.	Kode Artikel	Author	Judul Artikel
1	ICH-052	Hendra Permana	The Correlation between Sleep Deprivation and Motor Skill among Night Shift Residents in DR. M. Djamil Hospital, Padang.
2	ICH-053	Hendra Permana	The Correlation between Old-Generation Antiepileptic Drugs Usage with Carotid Intima-Media Thickness in Epilepsy Patient
3	ICH-054	Hendriati	THE ASSOCIATION OF CYP1A1 GENE POLYMORPHISMS WITH CYP1A1 ENZYMES, p53 PROTEIN, AND VASCULAR ENDOTHELIAL GROWTH FACTOR LEVELS IN PTERYGIUM
4	ICH-055	Hendriati	Surgical Management of Ptosis – Visual Function and Cosmetic Outcome
5	ICH-056	Henny Lucida	A Comparative Dissolution Study of Chloramphenicol Capsules Marketed in Indonesia
6	ICH-057	Hermalinda Herman	The effect of assertive training on reducing bullying in school
7	ICH-058	Hidayati	Correlation of Bottle Feeding to Malocclusion on Indonesian 3-6-year-old Preschool Children in Pariaman City, West Sumatera, Indonesia
8	ICH-059	Himmi Marsiatl	Acute Toxicity Study and Antioxidant Activities of Pohpohan leaves ( <i>Pilea trinervia</i> (Roxb.) Wight) and Keniklr ( <i>Cosmos caudatus</i> )
9	ICH-060	Ichsan Rizany	The Implementation of Nursing Scheduling Management with Nurse Satisfaction at DKI Jakarta General Hospital
10	ICH-061	Irza Wahid	CORRELATION OF THROMBIN ANTITHROMBIN COMPLEX WITH INDOXYL SULFATE LEVEL IN CHRONIC KIDNEY DISEASE PATIENTS
11	ICH-062	Isna Ovari	FOCUSING MODEL: Socialization Activities TUNAGRAHITA STUDENT LEARNING GROUPS ARE CLASSED
12	ICH-063	Leni Merdawati	Relationship of Individual Characteristics and Family Support with Distress On Breast Cancer Patients In Indonesia
13	ICH-064	Leni Merdawati	EFFECT OF YOGA EXERCISE ON BLOOD GLUCOSE LEVEL ON TYPE 2 DIABETES MELLITUS PATIENTS
14	ICH-065	Lili Fajria	Early Detection of Youth Sexual Orientation on Senior High School Student In West Sumatera
15	ICH-066	Martga Bella R	Hospital Power Supply Scenario for Disaster Emergency Management
16	ICH-067	Masrul	The Effect of Diet with Certain Glycemic Index and Exercise with Blood Glucose Levels and Insulin of Type 2 Diabetes Patients In Minangkabau Ethnicity
17	ICH-068	Masrul	Analysis on the relationship between Chronic Asthma Based on Spirometry, and Interleukin 4 and Interleukin 13

Day II, November 14th of 2018 (14.00 - 18.00 WIB)

Group 1

No.	Kode Artikel	Author	Judul Artikel
1	ICH-069	Melda Amalia	DIFFERENCES OF UMBILICAL CORD ZINC AND COPPER LEVELS OF NORMAL NEONATUS AND INTRA UTERINE GROWTH RESTRICTION NEONATUS
2	ICH-070	Meri Neherta	The Relationship of Family Support With The Quality of Life of Elderly Osteoarthritis In Nanggalo Padang Indonesia 2016
3	ICH-071	Muhammad Rifki	FACTORS OF DELAYED TIME FOR MEDICAL VISIT OF ADVANCED STAGE BREAST CANCER PATIENTS IN DR. M. DJAMIL HOSPITAL
4	ICH-072	Nazrita	Wet Compresses and Ice Packs for Body Temperature Reduction in Patients with Head Injury
5	ICH-073	Netti Suharti	The Effect of Dadiah Feeding of Breastfeeding Women with Normal Flora of Digestive Tract
6	ICH-074	Netty Suharti	Total Fenolic Contents and Antioxidant Activities of White Ginger Lily ( <i>Medychium coronarium</i> . J. koenig) Rhizome Ethanol Extract
7	ICH-075	Nice Rachmawati M	Screening for Risk of Malnutrition and Hospital Malnutrition In Department of Ch ld Health Dr. M. Djamil Hospital, Padang
8	ICH-076	Ninda Devita	Comparative Test of Dopamine Level In Woman Obese Adult Subjects
9	ICH-077	Nova Indriyani	THE ASSOCIATION BETWEEN UNDERLYING DISEASE, TYPE OF ACUTE RESPIRATORY FAILLURE AND OUTCOME IN PULMONARY WARD OF REGIONAL REFERRAL HOSPITAL PADANG
10	ICH-078	Nurhayati	The relationship between Interleukin-10 gene polymorphisme and il-10 levels in geohelminth positive adolescents and adults
11	ICH-079	Nuzulia Irawati	Identifikasi dan Uji Efektivitas <i>Bacillus thuringiensis israelensis</i> terhadap Larva <i>Anopheles spp</i> di Kecamatan Koto XI Tarusan Pesisir Selatan
12	ICH-080	Okdi Natan	Association Between Carbohydrate and Fat Intake and Estradiol Levels with Body Fat Percentage In Minangkabau Ethnic Premenopausal Women, in Padang City West Sumatra Year 2018
13	ICH-081	Paramithe Rosani	The Relationship Of Bullying Behavior With Depression In Adolescents
14	ICH-082	Qaira Anum	SNP PARK2-e01 (-2599) POLYMORPHISM PARK2 GENE AS A RISK FACTOR CAUSED LEPROSY
15	ICH-083	Rafli	Vitamin D Status In Diabetic Ulcer Patients
16	ICH-084	Renowati	The Effect Of <i>Aloe vera</i> Gel On Widal Titer Of Rats Ingested <i>Salmonella typhi</i> Bacteria
17	ICH-085	Ressa Oashttamadea	Unit Cost Analysis of Laboratory Services in Nalli DBS Hospital in 2007 Using Activity Based Costing (ABC) Method

Group 2

No.	Kode Artikel	Author	Judul Artikel
1	ICH-086	Rlanita Citra TS	FACTORS RELATED TO CLINICAL PATHWAY DOCUMENTATION AMONG NURSES' AT PSYCHIATRIC HOSPITAL IN SOUTH SUMATERA
2	ICH-087	Rika Susanti	ANALYSIS OF NEURON SPECIFIC ENOLASE OF CEREBROSPINAL FLUID AND POST MORTEM SERUM OF BLUNT HEAD TRAUMA IN CAUSE AND TIME OF DEATH DETERMINATION
3	ICH-088	Rlma Semiarty	Comparison of Risk Factors Related To Survival In Breast Cancer Patients In The Low and High Plains In West Sumatra, Indonesia
4	ICH-089	Rlma Semiarty	Survival Rates of Patients With Breast Cancer Treated In West Sumatera Province, Indonesia
5	ICH-090	Rismawal Yaswir	THE CORRELATION OF ATHEROGENIC INDEX OF PLASMA AND SMALL DENSE LOW DENSITY LIPOPROTEIN WITH THE DEGREE OF CORONARY ARTERY STENOSIS IN ACUTE CORONARY SINDROME
6	ICH-091	Rizanda Machmud	Reaching hard to reach population In TB Program through religious, informal leaders and traditional music In West Sumatera Province, Indonesia
7	ICH-092	Rizki Edmi E	Resting-State EEG Findings In Porn-Addicted Adolescents
8	ICH-093	Rizki Rahmadlan	The Effect of Mesenchymal Stem Cells on IL-1 $\beta$ and IL-6 In Grade IV Osteoarthritis-Derived Synoviocytes
9	ICH-094	Romi Saputra	Profile of Burns Patients Died in Burn Unit of Dr. M Djamil Hospital Padang In Periode of January 2015 until December 2017
10	ICH-095	Roni Eka S	Effect of Mesenchymal Stem Cells on Primo Scaffold on Proteolytic Enzyme Levels, Transforming Growth Factor $\beta$ , Vertebral Column Fusion performed by Laminoplasty
11	ICH-096	Roni Eka S	Sacrectomy as treatment of giant cell tumor in dr. M. Djamil Hospital Padang :A Case Report
12	ICH-097	Rosfita Rasyid	EPIDEMIOLOGY STUDY OF DIPHTERIA INDONESIA; A CASE IN SOLOK DISTRIC IN 2012 - 2015
13	ICH-098	Roza Mulyana	Correlation between Insulin-like Growth Factor-1 (IGF-1) and Serum Albumin Levels of Elderly Malnourish Patients
14	ICH-099	Roza Silvia	THE EFFECTS OF FSH AND GLUTATHIONE SUPPLEMENTATION TO THE IN VITRO MATURATION MEDIA ON MOUSE OOCYTE MATURATION AND EMBRYO DEVELOPMENT
15	ICH-100	Rully Hevriani	Effect of Foot Massage and Compression Stacking on Pain Intensity and Degrees of Edema in Third Trimester Pregnancy In Pekanbaru City Health Center
16	ICH-101	Shinta Ayu I	Clear Cell Carcinoma Ovarii with Metastasis to the Peritoneum: A Case Report and Literature Review
17	ICH-102	Shinta Ayu I	Correlation Expression PTEN and Expression IGF1 with Expression Ki-67 and The Grading Histopatologic of Carcinoma Mammae Invasive