p-ISSN 2355-8393
e-ISSN 2599-056X

# FOLIA MEDICA INDONESIANA

Vol. 57 No. 2 June 2021

**EFFECTIVENESS OF THE NEWBORN BEHAVIORAL OBSERVATION (NBO) SYSTEM IN IMPROVING MOTHER AND INFANT INTERACTION**
(Siti Wahyu Windarti, Ahmad Suryawan)

**THE IMPROVEMENT OF COMMUNITY KNOWLEDGE, ATTITUDES AND PRACTICES AFTER COVID-19 SOCIALIZATION**
(Siti Khaerunnisa, Irmi Syafa'ah, Citrawati Dyah Kencono Wungu, Gwenny Ichsan, Retno Handajani ...)

**RISK FACTORS OF BODY MASS INDEX (BMI), AGE OF MENARCHE, PARITY AND HORMONAL CONTRACEPTION OF GENU OSTEOARTHRITIS IN FEMALE PATIENTS**
(Alisiya, Sulistiawati, Patricia Maria Kurniawati, RR. Indrayuni Lukitra Wardhani)

**EXAMINATION OF MICRO VASCULAR DENSITY ON METASTATIC COLORECTAL CANCER OF RAS MUTANT-TYPE AS ANTI VEGF THERAPY PREDICTOR**
(Heru Sulistyo, Vicky Sumarki Budipramana)

**HIGH-FAT DIET INCREASES SERUM HDL, BUT NOT FOR LDL AND HDL/LDL RATIO IN MICE**
(Iqbal Laksana, Purwo Sri Rejeki, Lilik Herawati, Mohammad Anam Al Arif, Indrayuni Lukitra Wardhani)

**FOUR WEEKS EXERCISE IN VARY INTENSITIES REDUCE MORE INGUINAL FAT THAN PERIGONADAL FAT IN MICE**
(Ahmad Rukhani Lutfi, Paulus Liben, Lilik Herawati)

**MOLECULAR GENOTYPING OF TSST-1 GENE STAPHYLOCOCCUS AUREUS FROM CLINICAL SPECIMEN**
(Marinda Dwi Puspitarini, Wahyu Setyarini, Usman Hadi, Kuntaman)

**THE EFFECT OF ANTINOCICEPTIVE FLAVONOID ON LEEA INDICA LEAVES FOR OROFACIAL PAIN OF ADULT ZEBRA FISH (DANIO RERIO)**
(Mei Putra Daya, Arman Yurisaldi Saleh, Riezky Valentina Astari)

**LOWER LEVEL OF INTERLEUKIN-6 AND HEPCIDIN FOUND IN LOWER DENSITY OF PHYSICAL EXERCISE AMONG ATHLETE DURING PANDEMIC OF COVID-19**
(Deni Purwani, Sulistiawati, Bambang Purwanto)

**DETECTION OF ESCHERICHIA COLI USING PCR ANALYSIS WITHOUT DNA EXTRACTION**
(Wimbuh Tri Widodo, Choirul Huda)

**MORTALITY RISK FACTORS IN TETRALOGY OF FALLOT PATIENTS UNDERGOING TOTAL CORRECTION**
(Juliana, Yan Efrata Sembiring, Mahrus Abdur Rahman, Heroe Soebroto)

**MORTALITY COMPARISON OF USING ANTI INTERLEUKIN-6 THERAPY AND USING STANDARD TREATMENT IN SEVERE COVID-19**
(Jonathan Christianto Sutadji, Agung Dwi Wahyu Widodo, Danti Nur Indiastuti)

**HIGH RISK OF FAILED SKIN GRAFT ON MAJOR BURN PATIENTS WITH COMPLICATION OF HYPERNATREMIA**
(Lynda Hariani, Agus Santoso Budi, Ephora Christian Wulandari)

**DISTRIBUTION OF HUMAN PAPILLOMA VIRUS (HPV) IN CERVICAL ADENOCARCINOMA AND ADENOSQUAMOUS CARCINOMA**
(Gondo Mastutik, Alphania Rahniayu, Nila Kumiasari, Anny Setijo Rahaju, Budi Harjanto)

**Case Report:**
**EMBRYONAL RHABDOMYOSARCOMA OF PROSTATE IN ADULT: A RARE CASE REPORT**
(Dimas Panca Andhika, Sunaryo Hardjowijoto)

**International Online Distribution by ProQuest™ www.proquest.com**

| Folia Medica Indonesiana | Vol. 57 | No. 2 | Page 90-185 | Surabaya June 2021 | p-ISSN: 2355-8393 e-ISSN: 2599-056X |
|---|---|---|---|---|---|

FOLIA MEDICA INDONESIANA
Published by
Faculty of Medicine, Universitas Airlangga, Indonesia
p-ISSN 2355-8393
e-ISSN 2599-056X

# Editorial Team

**Kuntaman Kuntaman**
Editor in Chief
Department of Medical Microbiology, Faculty of Medicine, Universitas Airlangga; Indonesian Society for Clinical Microbiology, Indonesia

0000-0003-4897-8879 Google Scholar 8700386400 6086035

**Viskasari Pintoko Kalanjati**
Associate Editor
Department of Anatomy Histology and Pharmacology, Faculty of Medicine, Universitas Airlangga, Indonesia; International Federation of Associations of Anatomists (IFAA), Indonesia

0000-0002-7005-0025 Google Scholar 54388384000 5975075

**Lucky Prasetiowati**
Editorial Board
PAAI, Indonesia

0000-0002-8929-9816 Google Scholar 57192906307 5995382

**Muhammad Miftahussurur**
Editorial Board
Universitas Airlangga, Indonesia; Baylor College Medicine, Houston, US

0000-0003-1415-6033 Google Scholar 56323903000 6031037

**Yoshio Yamaoka**
Editorial Board
Oita University, Japan

0000-0002-1222-5819 Google Scholar 55183784100 -

**Purwo Sri Rejeki**
Editorial Board
Department of Physiology and Biochemistry, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia

0000-0003-2363-6362 Google Scholar 35088990700 6067303

**Delvac Oceandy**
Editorial Board
Division of Cardiovascular Sciences, Faculty of Biology, Medicine, and Health, The University of Manchester, Manchester, United Kingdom

0000-0002-6242-6491 - 6506557120 -

**Andrew Paul Smith**
Editorial Board
Centre for Occupational and Health Psychology, School of Psychology, Cardiff University, Cardiff, United Kingdom

0000-0001-8805-8028 - 35429650000

## Franco Servadei
**Editorial Board**

Department of Neurosurgery, Humanitas University, Italy

0000-0002-3595-3464 Google Scholar 7006077203 -

## Marten J Postma
**Editorial Board**

Faculty of Science, Swammerdam Institute for Life Sciences, University of Amsterdam, Netherlands

0000-0002-3167-3633 Google Scholar - -

## Aryati Aryati
**Editorial Board**

PDS PATKLIN, Indonesia

0000-0001-9055-0177 Google Scholar 56054058600 6043865

## Dirk Jan Marie de Ridder
**Editorial Board**

Department of Development and Regeneration, Katholieke Universiteit Leuven, Belgium

- Google Scholar - -

## Horie Shigeo
**Editorial Board**

Department of Urology, Faculty of Medicine, Juntendo University, Japan

0000-0002-8612-8368 - 57222920684 -

## Yusuke Suzuki
**Editorial Board**

Department of Nephrology, Faculty of Medicine, Juntendo University, Japan

- 8388474600 -

## Hiroaki Kimura
**Editorial Board**

Department of Physical Medicine and Rehabilitation, Hiroshima University Hospital, Japan

0000-0003-0005-5805 - 49763362000 -

## Bambang Purwanto
**Editorial Board**

Master Program of Sport Medicine, Dr. Soetomo General Academic Hospital, Indonesia

0000-0002-3786-7068 Google Scholar 57152859900 5987193

## Arend Frederik Bos
**Editorial Board**

Division Neonatology, Faculty of Medical Sciences, University of Groningen, Netherlands

- 36839156800 -

## Azimatul Karimah
**Editorial Board**

Dr. Soetomo General Academic Hospital, Surabaya, Indonesia

0000-0002-0261-7878 Google Scholar 55640202700 6058132


**Reny I'tishom**
**Editorial Board**
Department of Biomedical Sciences, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia
0000-0002-9971-7786 Google Scholar 57209243610 5984521



**Christianto Lumenta**
**Editorial Board**
Bogenhausen Academic Teaching Hospital, Technical University, Munich, Germany
0000-0002-4030-0708 - 55397690000 -



**Irwanto Irwanto**
**Editorial Board**
Department of Child Health, Universitas Airlangga, Indonesia
0000-0002-7573-8793 Google Scholar - 255759



**Jitti Hanprasertpong**
**Editorial Board**
Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand
0000-0002-0640-6824 Google Scholar 21740891300 -



**Surasak Sangkhathat**
**Editorial Board**
Pediatric Surgery Unit, Department of Surgery, Prince of Songkla University, Songkhla, Thailand
0000-0003-3622-3233 - 6602156542 -



**Brahmaputra Marjadi**
**Editorial Board**
Western Sydney University, Penrith, Australia
0000-0003-0898-3737 Google Scholar 28267975300 -



**Asra Al Fauzi**
**Editorial Board**
PERSPEBSI (Perhimpunan Spesialis Bedah Saraf Indonesia- INS), Indonesia; Surabaya Neuroscience Institute (SNeI), Indonesia
0000-0002-5155-2476 Google Scholar 57215857858 5984620



**Wihasto Suryaningtyas**
**Editorial Board**
PERSPEBSI, Indonesia; Dr. Soetomo General Academic Hospital, Indonesia
0000-0002-1187-3777 Google Scholar 57216140907 5987008



**Siti Khaerunnisa**
**Editorial Board**
Department of Physiology and Medical Biochemistry, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia
0000-0002-6358-8265 Google Scholar 57205438945 6072589



**Atika Wardah**
**Assistant Editor**
Unit Konsorsium Jurnal dan Folia Medica Indonesiana, Indonesia
0000-0002-8065-4922 Google Scholar -

FOLIA MEDICA INDONESIANA
Published by
Faculty of Medicine, Universitas Airlangga, Indonesia
p-ISSN 2355-8393
e-ISSN 2599-056X

# Vol. 57 No. 2 (2021): June

## Current Issue


Vol. 57 No. 2 (2021): June

**Published:** 2021-06-01

## Full Issue

Vol. 57 No. 2 June 2021

## Front Matter

### Front Matter

Abstract : 86

PDF : 111

PDF

DOI : 10.20473/fmi.v57i2.27201

## Back Matter

### Back Matter

Abstract : 61

PDF : 0

DOI : 10.20473/fmi.v57i2.27202

## Original Research Report

### Effectiveness of The Newborn Behavioral Observation (NBO) System in Improving Mother and Infant Interaction

Siti Wahyu Windarti , Ahmad Suryawan

90-94

Abstract : 1394

PDF : 847

PDF

DOI : 10.20473/fmi.v57i2.21558

### The Improvement of Community Knowledge, Attitudes and Practices After Covid-19 Socialization

Siti Khaerunnisa , Irmi Syafa'ah , Citrawati Dyah Kencono Wungu , Gwenny Ichsan Prabowo , Retno Handajani , Indri Safitri , Harianto Notopuro , Ema Qurnianingsih , Lina Lukitasari , Ira Humairah , Arief Bakhtiar , Suwandito Suwandito , Susi Wahyuning Asih , Zuhrotul Eka Yulis Anggraeni , Ginanjar Sasmito Adi , Ely Rahmatika Nugrahani , Ayesie Natasha Zulka , Soetjipto Soetjipto

95-103

Abstract : 2010

PDF :

PDF

DOI : 10.20473/fmi.v57i2.26

**Risk Factors of Body Mass Index (BMI), Age of Menarche, Parity and Hormonal Contraception of Genu Osteoarthritis in Female Patients**

Alisiya Alisiya , Sulistiawati Sulistiawati , Patricia Maria Kurniawati , RR Indrayuni Lukitra Wardhani

104-110

Abstract : 691

PDF : 545

PDF

DOI : 10.20473/fmi.v57i2.23029

**Examination of Micro Vascular Density on Metastatic Colorectal Cancer of RAS Mutant-Type as Anti Vegf Therapy Predictor**

Heru Sulistyo , Vicky Sumarki Budipramana

111-116

Abstract : 409

PDF : 648

PDF

DOI : 10.20473/fmi.v57i2.18249

**High-Fat Diet Increases Serum HDL, but Not for LDL and HDL/LDL Ratio in MICE**

Iqbal Laksana , Purwo Sri Rejeki , Lilik Herawati , Mohammad Anam Al Arif , Indrayuni Lukitra Wardhani

117-120

Abstract : 740

PDF : 299

PDF

DOI : 10.20473/fmi.v57i2.16123

**Four Weeks Exercise in Vary Intensities Reduce More Inguinal Fat Than Perigonadal Fat in Mice**

Ahmad Rukhani Lutfi . Paulus Liben . Lilik Herawati

121-128

Abstract : 582

PDF : 699

PDF

DOI : 10.20473/fmi.v57i2.18497

**Molecular Genotyping of Tsst-1 Gene Staphylococcus Aureus from Clinical Specimen**

Marinda Dwi Puspitarini , Wahyu Setyarini , Usman Hadi , Kuntaman Kuntaman

129-134

Abstract : 806

PDF : 747

PDF

DOI : 10.20473/fmi.v57i2.17559

**The Effect of Antinociceptive Flavonoid on Leea Indica Leaves for Orofacial Pain of Adult Zebra Fish (Danio Rerio)**

Mei Putra Daya , Arman Yurisaldi Saleh , Riezky Valentina Astari

135-142

Abstract : 734

PDF : 747

PDF

DOI : 10.20473/fmi.v57i2.17711

**Lower Level of Interleukin-6 and Hepcidin Found in Lower Density of Physical Exercise among Athlete During Pandemic of Covid-19**

Deni Purwani , Sulistiawati Sulistiawati , Bambang Purwanto

143-146

Abstract : 782

PDF : 707

PDF

DOI : 10.20473/fmi.v57i2.23590

**Detection of Escherichia Coli Using PCR Analysis Without DNA Extraction**

Wimbuh Tri Widodo . Choirul Huda

147-150

Abstract : 774

PDF : 418

PDF

DOI : 10.20473/fmi.v57i2.22097

**Mortality Risk Factors in Tetralogy of Fallot Patients Undergoing Total Correction**

Juliana Juliana , Yan Efrata Sembiring , Mahrus Abdur Rahman , Heroe Soebroto

151-157

Abstract : 625 PDF : 871

PDF DOI : 10.20473/fmi.v57i2.22107

**Mortality Comparison of Using Anti Interleukin-6 Therapy and Using Standard Treatment in Severe Covid-19**

Jonathan Christianto Sutadji , Agung Dwi Wahyu Widodo , Danti Nur Indiastuti 158-165

Abstract : 700 PDF : 591

PDF DOI : 10.20473/fmi.v57i2.21929

**High Risk of Failed Skin Graft on Major Burn Patients with Complication of Hypernatremia**

Lynda Hariani , Agus Santoso Budi , Ephora Christina Wulandari 166-169

Abstract : 556 PDF : 283

PDF DOI : 10.20473/fmi.v57i2.17864

**Distribution of Human Papilloma Virus (HPV) in Cervical Adenocarcinoma and Adenosquamous Carcinoma**

Gondo Mastutik , Alphania Rahniayu , Nila Kurniasari , Anny Setijo Rahaju , Budi Harjanto 170-176

Abstract : 749 PDF : 691

PDF DOI : 10.20473/fmi.v57i2.26473

## Case Report/ Case Series

**Embryonal Rhabdomyosarcoma of Prostate in Adult: A Rare Case Report**

Dimas Panca Andhika , Sunaryo Hardjowijoto 177-185

Abstract : 491 PDF : 303

PDF DOI : 10.20473/fmi.v57i2.21594




Focus and Scope | Section Policies

Publication Frequency | Publication Ethics

Article Processing Charge | Peer Reviewer

# DISTRIBUTION OF HUMAN PAPILLOMA VIRUS (HPV) IN CERVICAL ADENOCARCINOMA AND ADENOSQUAMOUS CARCINOMA

**Gondo Mastutik[1], Alphania Rahniayu[1,2], Nila Kurniasari[1,2], Anny Setijo Rahaju[1,2], Budi Harjanto[3,4]**
[1] Department of Anatomic Pathology, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia
[2] Department of Anatomic Pathology, Dr. Soetomo General Academic Hospital, Surabaya, Indonesia
[3] Resident Consultant, Department of Obstetric Gynecology, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia.
[4] Resident Consultant, Department of Obstetric Gynecology, Dr. Soetomo General Academic Hospital, Surabaya, Indonesia.

## ABSTRACT

*Approximately 20-30% of all cervical cancer cases are adenocarcinoma and adenosquamous carcinoma. Around 70% of all of these types of cancer are related to infection of Human Papillomavirus (HPV). This study evaluated the distribution of HPV genotype in cervical adenocarcinoma and adenosquamous carcinoma. A cross-sectional study was conducted at the Department of Anatomic Pathology, Dr. Soetomo General Academic Hospital, Surabaya, Indonesia, from January to December 2015. The sample were 22 formalin-fixed paraffin-embedded (FFPE) of cervical adenocarcinoma tissues and adenosquamous carcinoma tissues. FFPE was used for DNA extraction and followed with HPV genotyping to detect 40 genotypes of HPV, including low risk (LR) and high risk (HR) HPV. The histopathological types of adenocarcinoma were adenocarcinoma NOS and mucinous adenocarcinoma, while the adenosquamous carcinoma types were adenosquamous carcinoma and adenosquamous carcinoma glassy. All of the specimens were infected by HPV. In cervical adenocarcinoma, the infection was by HPV 6, 11, 16, 18, 31, 45, 68B, and 72, and in adenosquamous carcinoma by HPV 6, 16, 18, 45, and 59. HPV 18 was predominant, which was found in 13/22 (59.1%) in adenocarcinoma and 19/22 (86.4%) in adenosquamous carcinoma. Single infection and multiple infections in adenocarcinoma were 13/22 (59.1%) and 9/22 (40.9%), while in adenosquamous carcinoma were 21/22 (95.5%) and 1/22 (4.5%) respectively. The most common HR HPVs found in this study were HPV 18, HPV 45, HPV 16 and LR HPV are HPV 11, HPV 6.*

***Keywords**: human papillomavirus; cervical cancer; cervical adenocarcinoma; cervical adenosquamous carcinoma*

## ABSTRAK

*Sekitar 20-30% kanker serviks merupakan adenokarsinoma dan adenosquamous carcinoma. Kedua kanker ini sekitar 70-100% terkait dengan infeksi Human Papillomavirus (HPV). Tujuan penelitian ini adalah untuk mengevaluasi distribusi genotipe HPV pada adenokarsinoma serviks dan karsinoma adenosquamous serviks. Penelitian dilakukan secara potong melintang di Departemen Patologi Anatomi RSUP Dr. Soetomo Surabaya pada periode Januari-Desember 2015. Sampel penelitian adalah 22 blok parafin dari jaringan adenokarsinoma serviks dan 22 blok paraffin dari jaringan adenosquamous carcinoma. Blok paraffin digunakan untuk ekstraksi DNA dan dilanjutkan analsis genotipe HPV yang dilakukan dengan mendeteksi 40 genotipe HPV, termasuk HPV risiko rendah (LR) dan risiko tinggi (HR). Jenis adenokarsinoma secara histopatologi adalah adenokarsinoma NOS dan adenokarsinoma musinosa; Jenis karsinoma adenosquamous adalah adenosquamous carcinoma dan adenosquamous carcinoma glassy. Semua spesimen terinfeksi HPV, pada adenokarsinoma serviks adalah HPV 6, 11, 16, 18, 31, 45, 68B, 72 dan pada karsinoma adenosquamous adalah HPV 6, 16, 18, 45, 59. HPV 18 didominasi, yang menunjukkan 13/22 (59,1%) pada adenokarsinoma dan 19/22 (86,4%) pada karsinoma adenosquamous. Infeksi tunggal dan multipel pada adenokarsinoma sebanyak 13/22 (59,1%) dan 9/22 (40,9%) dan pada karsinoma adenosquamous adalah 21/22 (95,5%) dan 1/22 (4,5%). ), masing-masing. HPV HR yang paling umum adalah HPV 18, HPV 45, HPV 16 dan HPV LR adalah HPV 11, HPV 6.*

***Kata kunci**: human papillomavirus; kanker serviks; adenokarsinoma serviks; karsinoma adenosquamous serviks*

**Correspondence**: Gondo Mastutik, Department of Anatomic Pathology, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia. E-mail: gondomastutik@fk.unair.ac.id

pISSN:2355-8393 ● eISSN: 2599-056x ● doi: 10.20473/fmi.v57i2.26473
● Fol Med Indones. 2021;57:170-176 ● Received 22 Apr 2021 ● Accepted May 13 2021

## INTRODUCTION

Cervical cancer is the fourth most common cancer that diagnosed in women after breast, colorectal, and lung cancer in the world. Based on data of the International Agency for Research on Cancer (IARC) in 2018, there was approximately 570 000 cervical cancer cases and 311 000 deaths occurred due to this disease. The incidence rate was 13.1 per 100 000 women and the mortality rate was 6.9 per 100 000 women (Bray et al 2018, Arbyn et al 2020). In 2020, IARC estimated that the number of new cervical cancer cases and mortality in the world was also in the fourth rank of all cancer cases, which was 604 127 (6.5%) for incidence and 341 831 (7.7%) for mortality (Globocan 2020a). In Indonesia, with total populations around 273 523 621 peoples, the incidence and mortality of cervical cancer was the second most common cancer after breast cancer at 2020. The incidence rate of cervical cancer was 36 633 cases (9.2%) and breast cancer was 65 858 (16.6%) (Globocan 2020b). In addition, these data also showed that cervical cancer in Indonesia was high and its incidence and mortality occupied the third rank in the world after India and China (Globocan 2020a).

Based on histopathological feature, there are three main types of cervical cancer, the squamous cell carcinoma, adenocarcinoma, and adenosquamous carcinoma (Fujiwara et al 2014, Siriaunkgul et al 2013). The most common type of cervical cancer is squamous cell carcinoma, that approximately 70-75% of all cervical cancer. The remaining is cervical adenocarcinoma and adenosquamous carcinoma that around 20 -25% of cervical cancer (Fujiwara et al 2014, Siriaunkgul et al 2013). In the last decades, the incidence of squamous cell carcinoma tends to decrease, but adenocarcinoma and adenosquamous carcinoma tend to increase (Gien et al 2010, Zhang et al 2020). Recently, both adenocarcinoma and adenosquamous carcinoma is still treated in the same way as squamous cell carcinoma, although it has a different microscopic appearance. Squamous cell carcinoma contains many squamous cell components, while adenocarcinoma contains more glandular components and adenosquamous carcinoma contains glandular components as well as squamous cell components. Both of adenocarcinoma or adenosquamous carcinoma are located deeper than the ectocervix (Stolnicu et al 2018, Kurman et al 2011).

Some studies showed that the prognosis of adenocarcinoma and adenosquamous carcinoma is worse than squamous cell carcinoma (Gien et al 2010, Fujiwara et al 2014), so that early detection and histopathological diagnosis are important to use as the basis for determining the management of this cancer therapy.

Both adenocarcinoma and adenosquamous carcinoma is associated with infection of Human Papillomavirus (HPV) (Fujiwara et al 2014). There are two groups HPV, the High Risk (HR) HPV and Low Risk (LR) HPV. HR HPV, including HPV 16, 18, 26, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 61, 73, and 81, is associated with cervical cancer development (Gutiérrez-Xicoténcatl et al 2009). LR HPV, consisting of HPV 6, 11, 40, 42, 43, 44, 54, 61, 72, and 81, is associated with the incidence of benign warts on oral and urogenital epithelium in adults and children (Zaravinos et al 2009). Several studies have shown that HPV DNA is found in 95- 100% of all cervical cancer (Gutiérrez-Xicoténcatl et al 2009, Izadi-Mood N et al 2012). Meta-analysis studies showed the genotypes of HPV that cause invasive cervical cancer in the world were HPV 16, 18, 33, 45, and 31 (Smith et al 2007).

The most common genotype of HPV in squamous cell carcinoma in Bandung Indonesia were HPV 16, 18, 45, and 52 (Panigoro et al 2013). Some studies showed that cervical adenocarcinoma and adenosquamous carcinoma were related with the HPV infection, with the most common were HPV 18 (Fujiwara et al 2014) or not related to HPV infection (Pirog 2017). Therefore, identification of HPV genotype infected in cervical adenocarcinoma and adenosquamous carcinoma is very important to be known and analyzed as a basis for determining the appropriate treatment of the cervical cancer.

The objective of this study was to evaluate the distribution of HPV genotype in cervical adenocarcinoma and adenosquamous carcinoma. This study detected 40 genotypes of HPV, including LR and HR-HPV from formalin fixed paraffin embedded (FFPE) specimens of cervical cancer types of adenocarcinoma and adenosquamous carcinoma.

## MATERIALS AND METHODS

### Sample Collection

A cross sectional study was conducted at the Department of Anatomic Pathology, Dr. Soetomo General Academic Hospital, Surabaya, Indonesia. Ethical clearance for this research was approved by Health Research Ethics Committee of the Faculty of Medicine, Universitas Airlangga. Data from cervical cancer patients in the period of January - December 2015 were recorded, then formalin-fixed paraffin embedded (FFPE) and Hematoxylin Eosin (HE) slides from these patients were collected. FFPE, in accordance with the inclusion criteria, was taken randomly and used for DNA extraction and HPV genotyping analysis. The

inclusion criteria were (1) specimens from cervical tissues diagnosed as adenocarcinoma and adenosquamous carcinoma by Pathologist and (2) tissue in FFPE were still adequate for immunohistochemistry staining (IHC). The exclusion criteria were (1) the cervical tissue in FFPE was completely cut or left insufficient to be used for slide processing and (2) tissue on FFPE was destroyed. In this study, there were 44 FFPE specimens from cervical tissues of adenocarcinoma and adenosquamous carcinoma patients.

**HPV Genotyping**

The preparation processes of FFPE for HPV genotyping were conducted as in our previous study (Mastutik et al 2018). Before use, the cutting area and the blades of the microtome was cleaned with 90% alcohol. This is useful for removing DNA residue and cell debris attached to the microtome and blade, thereby reducing DNA contamination. FFPE were cut into small pieces of ~25 µm2 (5 µm x 5 µm). A number of 3-5 slices were used to deparaffinization by xylol and rehydration with ethanol and continued with DNA extraction process. DNA extraction was performed by using QIAamp DNA Mini Kit (Qiagen) according to the manufacture's protocol. The extraction product was used as the Polymerase Chain Reaction (PCR) template.

HPV genotyping was performed to detect HPV DNA, using A*mpliquality* HPV *type express* v 3.0 (AB Analitica). Pre-denaturated PCR condition was performed for 10 min at 95ºC, followed by denaturation at 95ºC for 30 seconds, annealing at 50ºC for 30 seconds, and extension at 72ºC for 30 seconds. All cycles were 50 cycles. The last was final extension at 72ºC for 5 minutes. This study identified 40 genotypes of HPV, including low risk (LR) and high risk (HR) HPV. There were HPV 6, 11, 16, 18, 26, 31, 33,35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 55, 56, 58, 59,61, 62, 64, 66, 67, 68a, 68b, 69, 70, 71, 72, 73, 81, 82, 83,84, 87, 89, 90.

**RESULTS**

**The Characteristics of the Patients**

This study was conducted in 44 FFPE from cervical tissues of adenocarcinoma and adenosquamous carcinoma patients. There were 22 adenocarcinoma patients aged 39-75 years and 22 adenosquamous patients aged 35-62 years. Histopathological diagnosis consisted of adenocarcinoma NOS and mucinous adenocarcinoma for cervical adenocarcinoma group and adenosquamous carcinoma and adenosquamous carcinoma glassy for adenosquamous carcinoma group.

Clinical data and laboratory data profiles were presented in the table 1. The clinical data such as: temperature, heart rate and respiratory rate. Meanwhile, laboratory data that observed were white blood cell and erythrocyte sedimentation rate (ESR). Only 31 respondents from all samples were conducted respiratory check in medical record and 17 samples were checked the ESR.

Table 1. Characteristics of the patients

| Type of cervical cancer | Age (year) | Number (person) |
|---|---|---|
| Adenocarcinoma: | 39-75 | 22 |
| • Adenocarcinoma NOS | | 20 |
| • Mucinous Adenocarcinoma | | 2 |
| Adenosquamous carcinoma: | 35-62 | 22 |
| • Adenosquamous carcinoma | | 21 |
| • Adenosquamous carcinoma glassy | | 1 |
| Total | | 44 |

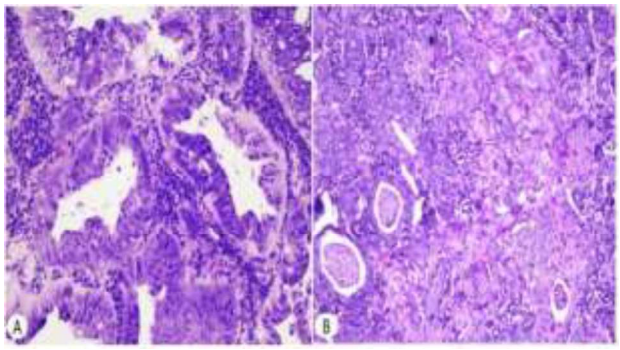


Figure 1. Histopathology of adenocarcinoma and adenosquamous carcinoma. (A) Cervical adenocarcinoma shows anaplastic epithelial cells arranged in irregular crowded glandular structure invading stroma, 200x (B) Cervical adenosquamous carcinoma shows tumor cells with biphasic pattern comprising of malignant glandular and squamous components, 200x

Table 2. Distribution of HPV genotype in cervical adenocarcinoma and adenosquamous carcinoma

| HPV genotype | Number (person) | Percentage (%) |
|---|---|---|
| Cervical adenocarcinoma | 22 | |
| HPV 18 (HR) | 13 | 59,1 |
| HPV 11, 18 (LR-HR) | 4 | 18,2 |
| HPV 6,18, 45 (LR-HR-HR) | 1 | 4,5 |
| HPV 11, 16 (LR-HR) | 1 | 4,5 |
| HPV 11, 31 (LR-HR) | 1 | 4,5 |
| HPV 6, 45 (LR-HR) | 1 | 4,5 |
| HPV 68b, 72 (HR-LR) | 1 | 4,5 |
| Cervical adenosquamous carcinoma | 22 | |
| HPV 16 (HR) | 1 | 4,5 |
| HPV 18 (HR) | 19 | 86,4 |
| HPV 45 (HR) | 1 | 4,5 |
| HPV 6, 59 (LR-HR) | 1 | 4,5 |
| Total | 44 | |

HPV: Human papillomavirus, HR: high risk, LR: low risk

**The Genotype of HPV in Cervical Adenocarcinoma and Adenosquamous Carcinoma**

In general, the genotypes of HPV in this study were HPV 6, 11, 16, 18, 31, 45, 59, 68B, 72. The genotype of HPV in cervical adenocarcinoma were HPV 6, 11, 16, 18, 31, 45, 68B, 72. HR-HPV were HPV 16, HPV 18, HPV 31, HPV 45, HPV 68B and LR-HPV were HPV 6, HPV 11, HPV 72. The genotype of HPV in adenosquamous carcinoma were HPV 6, 16, 18, 45, 59. HR-HPV were HPV 16, HPV 18, HPV 45, HPV 59. LR-HPV were HPV 6 (Table 2). The genotype of HPV in cervical adenocarcinoma and adenosquamous carcinoma were dominated by HPV 18 that was found in 13/22 (59,1%) for cervical adenocarcinoma and in 19/22 (86,4%) for cervical adenosquamous carcinoma.

HPV infection in this study was found as single infection by HR-HPV or multiple infection by HR/LR-HPV. In cervical adenocarcinoma, single infection was found in 13/22 (59,1%) and multiple infection in 9/22 (40,9%). Single infection by HPV 18 was in 13/22, while multiple infection by HPV 11, 18 was in 4/22; HPV 6, 18, 45 in 1/22; HPV 11, 16 in 1/22; HPV 11, 31 in 1/22; HPV 6, 45 in 1/22, and HPV 68b, 72 in 1/22. In cervical adenosquamous carcinoma, the single infection was in 21/22 (95,5%) and multiple infection was in 1/22 (4,5%). Single infection by HPV 16 was in 1/22; HPV 18 in 19/22; HPV 45 in 1/22, while multiple infection by HPV 6, 59 was in 1/22. In all of cervical cancer, both in adenocarcinoma and adenosquamous carcinoma, the single infection was found in 34/44 (77,3%) which were infected by HPV 16, 18, 45 and multiple infection was in 10/44 (22,7%) which infected were by HPV 6, 11, 31, 45, 58, 68B, 72 (Table 3).

The prevalence of HPVs that infected in cervical adenocarcinoma and adenosquamous carcinoma were HPV 18 (67,3%), HPV 45 (5,5%), HPV 16 (3,6%) for HR-HPV and HPV 11 (10,9%), HPV 6 (5,5%) for LR-HPV (Table 4).

Table 3. Single and multiples infection of HPV in cervical adenocarcinoma and adenosquamous carcinoma

| HPV Genotype | Number (person) | Percentage (%) |
|---|---|---|
| Cervical adenocarcinoma | 22 | |
| - Single infection | 13 | 59.1 |
| - Multiple infection | 9 | 40.9 |
| Cervical adenosquamous carcinoma | 22 | |
| - Single infection | 21 | 95.5 |
| - Multiple infection | 1 | 4.5 |
| Single infection | 34 | 77.3 |
| - HPV 18 (HR) | 32 | |
| - HPV 16 (HR) | 1 | |
| - HPV 45 (HR) | 1 | |
| Multiple infection | 10 | 22.7 |
| - HPV 11, 18 (LR-HR) | 4 | |
| - HPV 11, 16 (LR-HR) | 1 | |
| - HPV 11, 31 (LR-HR) | 1 | |
| - HPV 6, 18, 45 (LR-HR-HR) | 1 | |
| - HPV 6, 45 (LR-HR) | 1 | |
| - HPV 6, 59 (LR-HR) | 1 | |
| - HPV 68B, 72 (HR-LR) | 1 | |

Table 4. Prevalence of HPV genotype in cervical adenocarcinoma and adenosquamous carcinoma

| HPV Genotype | Number (time) | Percentage (%) |
|---|---|---|
| – HPV 18 | 37 | 67.3 |
| – HPV 11 | 6 | 10.9 |
| – HPV 45 | 3 | 5.5 |
| – HPV 6 | 3 | 5.5 |
| – HPV 16 | 2 | 3.6 |
| – HPV 31 | 1 | 1.8 |
| – HPV 59 | 1 | 1.8 |
| – HPV 68B | 1 | 1.8 |
| – HPV 72 | 1 | 1.8 |
| Total | 55 | 100 |

## DISCUSSION

The incidence of cervical adenocarcinoma and other type epithelial cancer, including adenosquamous carcinoma, was approximately 20-30% of cervical cancer. Both are rarely found so that guidelines in the management of therapy have not been established yet (Molijn et al 2016, Georgescu et al 2020). However, the incidence of cervical adenocarcinoma tends to increase, including in 13 European countries (Bray et al 2005), as well as in the Netherlands (Horst et al 2017). This was predominant in young women, age around 25-39 years old (Horst et al 2017). The survival rate and clinical outcome of cervical adenocarcinoma is worse than those in squamous cell carcinoma (Fujiwara et al 2014).

The World Health Organization was classified cervical cancer in three groups, the squamous cell carcinoma, adenocarcinoma, and other epithelial tumours. Adenocarcinoma consists of usual type adenocarcinoma, mucinous adenocarcinoma (endocervical type, intestinal type, signet-ring type), minimal deviation, villoglandular endometrioid adenocarcinoma, clear cell adenocarcinoma, serous adenocarcinoma, mesonephric adenocarcinoma. Another epithelial tumor is adenosquamous carcinoma that consists of adenosquamous carcinoma and adenosquamous carcinoma glassy variant (Kurman et al 2011, Stolnicu et al 2018). Based on histopathological type of cervical adenocarcinoma, the types of adenocarcinoma in this study belonged to adenocarcinoma of not otherwise specified (NOS) and mucinous adenocarcinoma. The adenosquamous carcinoma were adenosquamous carcinoma and adenosquamous carcinoma glassy.

Many studies found that HPV infection was associated with cervical cancer, including cervical adenocarcinoma and adenosquamous carcinoma. Study using in situ polymerase chain reaction on invasive adenocarcinoma glass slide showed that HPV DNA was detected underlying on adenocarcinoma cells and in squamous epithelium, while on adenosquamous carcinoma glass slide showed that HPV DNA was found mostly in pure squamous epithelium and small amount in the cervical gland (Ogura et al 2006). The prevalence of HPV infection varies around 60-100% (Ogura et al 2006, Molijn et al 2016). This was in accordance with the results of this study. We found that all of cervical cancer tissues in this study that consisted of 22 cervical adenocarcinomas and 22 cervical adenosquamous carcinoma showed 100% positively infected by HPV.

Other study showed that in cervical adenocarcinoma, including adenocarcinoma usual type, adenocarcinoma NOS, adenocarcinoma minimal deviation, clear cell adenocarcinoma, endometrioid adenocarcinoma, serous adenocarcinoma, 426 of 596 cases (71.5%) were positively infected by HPV (Molijn et al 2016). In addition, in 110 specimens of cervical adenosquamous carcinoma showed that 97/110 (88%) were positive for HPV (Molijn et al 2016). A study in Thailand showed that HPV DNA was detected in 145/150 (97%) FFPE specimens from cervical adenocarcinoma tissues (Siriaunkgul et al 2013) and in China from 121 cervical adenocarcinoma cases, 113 (93,4%) was positive for HPV infection (Wang et al 2018).

HPV infection is usually found in single infection by HR-HPV or multiple infection by HR/LR-HPV. In this study, the single infection of HPV both in adenocarcinoma and adenosquamous carcinoma was dominated by single infection of HR HPV that was 77.3% and followed by multiple infection of HR/LR HPV or HR/HR HPV of 22.7%. In addition, single infection in cervical adenosquamous carcinoma (95.5%) was higher than in cervical adenocarcinoma. (59.1%). This in accordance with another study that also showed that single infection in cervical adenocarcinoma was 375/596 (62,9%) and in multiple infection was 51/596 (8,6%) and single infection in cervical adenosquamous carcinoma was 88/110 (91%) and 9/110 (9%) in multiple infection (Molijn et al 2016). A study by Schellekens et al (2004) showed that single infection in adenocarcinoma was 93% and in adenosquamous carcinoma was 62%. Cervical adenocarcinoma in Thailand showed that single infection was 132/145 (91%) and multiple infection was 11/145 (8%) (Siriaunkgul et al 2013), while in China, single infection was 91 (75,3%) and multiple infection was 22 (18,1%) (Wang et al 2018).

This study was found that the most predominant HPV single infection both in cervical adenocarcinoma and adenosquamous carcinoma was HPV 18. The other study from 16 specimens of cervical adenocarcinoma cases in Indonesia that showed single infection were HPV 18 (9/16 cases), HPV 45 (2/16 cases), HPV 16 (1/16 cases), HPV 52 (1/16 cases), HPV 59 (1/16 cases) and multiple infection with HPV 16/ HPV 18 (1/16 cases), and 1 specimen negative for HPV, while from 13 cervical adenosquamous carcinoma cases showed that single infection of HPV 18 (6/13), and HPV 16 (1/13), HPV 59 (1/13), and multiple infection by HPV 16/18, HPV 16/52, HPV 18/45, HPV 18/52, HPV 18/52/5 (1/13) (Schellekens et al 2004). In Thailand, the most predominant HPV single infection in cervical adenocarcinoma was HPV 18 was 86/132 (65.2%) and followed by HPV 16 was 40/132 (30,3%) (Siriaunkgul et al 2013).

We found HPV 6, 11, 16, 18, 31, 45, 68B, 72 in cervical adenocarcinoma and HPV 6, 16, 18, 45, 59 in cervical adenosquamous carcinoma. In cervical adenocarcinoma, 59.1% were infected by HPV 18 and in cervical adenosquamous carcinoma, 86.4% were infected by HPV 18. This result was in accordance with other studies. Adenocarcinoma was associated with HPV 16 and HPV 18, but 50-58% was associated with HPV 18 (Fujiwara et al 2014).

A study in China from 718 specimens of cervical adenocarcinoma consisted of cervical adenocarcinoma usual mucinous type of 59%, adenosquamous of 15%, and other type of adenocarcinoma showing that infection of HPV had a clear relationship to HPV infection, particularly HPV 16, HPV 18, and HPV 45 (Molijn et al 2016). In Thailand, HPV 18 (95/145 66%) is the most common HPV in adenocarcinoma, followed by HPV 16 (44/145 30%), HPV 45 (5/145 3%) (Siriaunkgul et al 2013). In China, HPV 18 was identified in 35.8%, followed by HPV52 (21.6%), HPV 16 (17.4%), and HPV 58 (16.9%) (Wang et al 2018).

The most frequent of HR HPV in this study was HPV 18 (67.3%), HPV 45 (5.5%), HPV 16 (3.6%) and the LR HPV was HPV 11 (10.9%) and HPV 6 (5.5%). Another study in preinvasive and invasive cervical cancer showed that the most frequent HPV was HPV 16, HPV 18, HPV 45, HPV 52, HPV 67 (Mastutik et al 2018). The most common HPV that cause invasive cervical cancer in Asia are HPV 16, 18, 58, 33, 52, which HPV 52 and 58 are specific in Asia (Smith et al 2007). Most types of HPV in Indonesia were HPV 18, 16, 52, 45, 82 (Smith et al 2007). It was also found that the most often HPV found in invasive cervical cancer cases in Jakarta were HPV 16, 18, 52 (Schellenkens et al 2004), and in Bandung were HPV 16, 18, 45, 52 (Panigoro et al 2013, Tobing et al 2014). Furthermore, in Jakarta, Tasikmalaya, and Bali, Indonesia, the most common HPV were found to be HPV 52, 16, 18, and 39 (Vet et al 2008). This indicate that HPV 16 and HPV 18 is the most common causes of cervical cancer in Indonesia.

## CONCLUSION

HPV DNA was detected in 100% of cervical adenocarcinoma and adenosquamous carcinoma, in singe infection (77.3%) or multiple infection (22.7%) by HR/LR HPV or HR/HR HPV. The most common HPV in cervical adenocarcinoma, as well as in adenosquamous carcinoma, is HPV 18. In general, the most common HR HPV are HPV 18, HPV 45, HPV 16 and the most common LR HPV are HPV 11 and HPV 6. Based on this data, we suggest that the current use of a bivalent or quadrivalent vaccine can be used to prevent this type of cervical cancer, including cervical adenocarcinoma and adenosquamous carcinoma in Indonesia.

## ACKNOWLEDGMENT

We thanked to the Government of the Republic of Indonesia, the Ministry of Research, Technology, and Higher Education, in particular the Faculty of Medicine, Universitas Airlangga for financial support in this study.

## REFERENCES

Arbyn M, Weiderpass E, Bruni L, et al (2020). Estimates of incidence and mortality of cervical cancer in 2018: A worldwide analysis. Lancet Glob Health 8, e191-e203

Bray F, Carstensen B, Møller H, et al (2005). Incidence trends of adenocarcinoma of the cervix in 13 European countries. Cancer Epidemiol Biomarkers Prev 14, 2191-9.

Bray F, Ferlay J, Soerjomataram I, et al (2018). GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin 68, 394-424

Globocan (2020a). The Global Cancer Observatory 2020. International Agency for Research on Cancer. Available from https://gco.iarc.fr/. Accessed March 23, 2021.

Globocan (2020b). The Global Cancer Observatory 2020. International Agency for Research on Cancer: Indonesia. Available from https://gco.iarc.fr/. Accessed March 23, 2021.

Fujiwara K, Monk B, Devouassoux-Shisheboran M (2014). Adenocarcinoma of the uterine cervix: why is it different? Curr Oncol Rep 16, 1-9.

Georgescu MT, Georgescu DE, Georgescu TF, et al (2020). Changing the prognosis of metastatic cervix uteri adenosquamous carcinoma through a multimodal approach: A case report. Case Rep Oncol 13, 1545-51.

Gien LT, Beauchemin MC, Thomas G (2010). Adenocarcinoma: A unique cervical cancer. Gynecol Oncol 116, 140-6.

Gutiérrez-Xicoténcatl L, Plett-Torres T, Madrid-González CL, et al (2009). Molecular diagnosis of human papillomavirus in the development of cervical cancer. Salud Publica de Mexico 51, S479-88.

Izadi-Mood N, Asadi K, Shojaei H, et al (2012). Potential diagnostic value of P16 expression in premalignant and malignant cervical lesions. J Res Med Sci 17, 428-33

Kurman RJ, Ellenson LH, Ronnett BM (Eds.) (2011). Blaustein's pathology of the female genital tract, New York, Springer-Verlug, p 253-303.

Mastutik G, Alia R, Rahniayu A, et al (2018). Genotype human pappilomavirus in cervical precancerous lesion and squamous cell carcinoma at Dr Soetomo Hospital Surabaya. African Journal of Infectious Diseases 12, 7-12.

Molijn A, Jenkins D, Chen W, et al (2016). Chinese HPV typing group: The complex relationship between human papillomavirus and cervical adenocarcinoma. Int J Cancer 138, 409-16.

Ogura K, Ishi K, Matsumoto T, et al (2006). Human papillomavirus localization in cervical adenocarcinoma and adenosquamous carcinoma using in situ polymerase chain reaction: review of the literature of human papillomavirus detection in these carcinomas. Pathol Int 56, 301-8.

Panigoro R, Susanto H, Novel SS, et al (2013). HPV genotyping linear assay test comparison in cervical cancer patients: Implications for HPV prevalence and molecular epidemiology in a limited-resource area in Bandung, Indonesia. Asian Pac J Cancer Prev 14, 5843-7

Pirog EC (2017). Cervical adenocarcinoma: Diagnosis of human papillomavirus-positive and human papillomavirus-negative tumors. Arch Pathol Lab Med 141, 1653-67

Schellekens MC, Dijkman A, Aziz MF, et al (2004). Prevalence of single and multiple HPV types in cervical carcinomas in Jakarta, Indonesia. Gynecol Oncol 93, 49-53.

Siriaunkgul S, Utaipat U, Suthipintawong C, et al (2013). HPV genotyping in adenocarcinoma of the uterine cervix in Thailand. Int J Gynaecol Obstet 123, 226-30

Smith JS, Lindsay L, Hoots B, et al (2007). Human papillomavirus type distribution in invasive cervical cancer and high grade cervical lesions: A meta-analysis update. International Journal of Cancer 121, 621-632.

Stolnicu S, Barsan I, Hoang L, et al (2018). International endocervical adenocarcinoma criteria and classification (IECC): A New pathogenetic classification for invasive adenocarcinomas of the endocervix. Am J Surg Pathol 42, 214-226

Tobing MD, Sahiratmadja E, Dinda M, et al (2014). Human papillomavirus genotypes profile in cervical cancer patients at Dr. Hasan Sadikin General Hospital, Bandung, Indonesia. Asian Pac J Cancer Prev 15, 5781-5.

Horst vdJ, Siebers AG, Bulten J, et al (2017). Increasing incidence of invasive and in situ cervical adenocarcinoma in the Netherlands during 2004-2013. Cancer Med 6, 416-423.

Vet JNI, de Boer MA, van den Akker BEWM, et al (2008). Prevalence of human papillomavirus in Indonesia: A population-based study in three regions. British Journal of Cancer 99, 214–218.

Wang X, Zeng Y, Huang X, et al (2018). Prevalence and genotype distribution of human papillomavirus in invasive cervical cancer, cervical intraepithelial neoplasia, and asymptomatic women in Southeast China. Biomed Res Int 8, 1-10.

Zaravinos A, Mammas IN, Sourvinos G, et al (2009). Molecular detection methods of human papillomavirus. The International Journal of Biological Markers 24, 215-222

Zhang X, Lv Z, Xu X, et al (2020). Comparison of adenocarcinoma and adenosquamous carcinoma prognoses in Chinese patients with FIGO stage IB-IIA cervical cancer following radical surgery. BMC Cancer 20, 1-10.

# FOLIA MEDICA INDONESIANA

UNIVERSITAS AIRLANGGA

P-ISSN : 23558393 E-ISSN : 2599056X Subject Area : Education

0.525
Impact Factor

1020
Google Citations

Sinta 2
Current Acreditation

Google Scholar Garuda Website Editor URL

History Accreditation

2018 2020 2021 2022 2023 2024 2025

## Garuda Google Scholar

Longer Lag Time in Early-Stage Retinoblastoma
Faculty of Medicine, Universitas Airlangga Folia Medica Indonesiana Vol. 58 No. 2 (2022): June 103-107
2022 DOI: 10.20473/fmi.v58i2.24975 Accred : Sinta 2

The AKT Pathway and Satellite Cell Activation in Skeletal Muscle Mass Regulation
Faculty of Medicine, Universitas Airlangga Folia Medica Indonesiana Vol. 58 No. 1 (2022): March 68-73
2022 DOI: 10.20473/fmi.v58i1.13354 Accred : Sinta 2

Viral Load And Cd4+ among Hiv/Aids Patients Receiving Antiretroviral Therapy In Jayawijaya District, Papua Province, Indonesia
Faculty of Medicine, Universitas Airlangga Folia Medica Indonesiana Vol. 58 No. 1 (2022): March 10-14
2022 DOI: 10.20473/fmi.v58i1.18247 Accred : Sinta 2

Back Matter Vol.58 No.1 March 2022
Faculty of Medicine, Universitas Airlangga Folia Medica Indonesiana Vol. 58 No. 1 (2022): March
2022 DOI: 10.20473/fmi.v58i1.34145 Accred : Sinta 2

Acute Diarrhea Patients among Children Under Five Hospitalized in a Tertiary Hospital in East Java, Indonesia
Faculty of Medicine, Universitas Airlangga Folia Medica Indonesiana Vol. 58 No. 1 (2022): March 33-38

**KOMITE ETIK PENELITIAN KESEHATAN**
**FAKULTAS KEDOKTERAN UNIVERSITAS AIRLANGGA**
**SURABAYA**

# KETERANGAN KELAIKAN ETIK
# ("ETHICAL CLEARANCE")

**No. 298/EC/KEPK/FKUA/2015**

KOMITE ETIK PENELITIAN KESEHATAN FAKULTAS KEDOKTERAN UNIVERSITAS AIRLANGGA SURABAYA, TELAH MEMPELAJARI SECARA SEKSAMA RANCANGAN PENELITIAN YANG DIUSULKAN, MAKA DENGAN INI MENYATAKAN BAHWA PENELITIAN BERJUDUL :

**EKSPLORASI TIPE HUMAN PAPPILOMA VIRUS YANG MENGINFEKSI PENDERITA SQUAMUS CELL CARCINOMA SEVIKS, ADENOCARCINOMA SERVIKS, DAN KONDILOMA AKUMINATA**

PENELITI UTAMA :

**Dr. Gondo Mastutik, drh.,M.Kes.**
**Prof. Dr. Suhartono Taat Putra, dr.,MS.**
**Alphania Rahniayu, dr.,Sp.PA.**

UNIT / LEMBAGA / TEMPAT PENELITIAN :

- **Dept. Patologi Anatomi Fakultas Kedokteran Universitas Airlangga**
- **Institute of Tropical Disease (ITD) Universitas Airlangga**

## DINYATAKAN LAIK ETIK.

Surabaya, 26 Oktober 2015

a.n KETUA KEPK
Wakil Ketua KEPK

Prof. Moersintowarti B. Narendra, dr, MSc, Sp.A(K)