

DAFTAR PUSTAKA

- Abrishami, A. *et al.* (2021) 'Epicardial adipose tissue, inflammatory biomarkers and COVID-19: Is there a possible relationship?', *International Immunopharmacology*, 90(January). Available at: <https://doi.org/10.1016/j.intimp.2020.107174>.
- Akboga, M.K. *et al.* (2016) 'Association of Platelet to Lymphocyte Ratio with Inflammation and Severity of Coronary Atherosclerosis in Patients with Stable Coronary Artery Disease', *Angiology*, 67(1), pp. 89–95. Available at: <https://doi.org/10.1177/0003319715583186>.
- Ayça, B. *et al.* (2015) 'Platelet to lymphocyte ratio as a prognostic marker in primary percutaneous coronary intervention', *Platelets*, 26(7), pp. 638–644. Available at: <https://doi.org/10.3109/09537104.2014.968117>.
- Azevedo, R.B. *et al.* (2021) 'Covid-19 and the cardiovascular system: a comprehensive review', *Journal of Human Hypertension*, 35(1), pp. 4–11. Available at: <https://doi.org/10.1038/s41371-020-0387-4>.
- Badan Penelitian dan Pengembangan Kementerian Kesehatan RI, B.P. dan P.K.K.R. (2019) 'RISET KESEHATAN DASAR 2018', *Riset Kesehatan Dasar (RISKESDAS 2018)* [Preprint]. Available at: <https://www.kemkes.go.id/article/view/19093000001/penyakit-jantung-penyebab-kematian-terbanyak-ke-2-di-indonesia.html>.
- Balta, S. and Ozturk, C. (2015) 'The platelet-lymphocyte ratio: A simple, inexpensive and rapid prognostic marker for cardiovascular events', *Platelets*, 26(7), pp. 680–681. Available at: <https://doi.org/10.3109/09537104.2014.979340>.
- Bihan, H. *et al.* (2021) 'Epicardial adipose tissue and severe Coronavirus Disease 19', *Cardiovascular Diabetology*, 20(1), pp. 1–9. Available at: <https://doi.org/10.1186/s12933-021-01329-z>.
- Cammann, V.L. *et al.* (2020) 'Outcomes of acute coronary syndromes in coronavirus disease 2019', *Clinical Research in Cardiology*, 109(12), pp. 1601–1604. Available at: <https://doi.org/10.1007/s00392-020-01742-6>.
- Chong, P.Y. *et al.* (2004) 'Analysis of deaths during the severe acute respiratory syndrome (SARS) epidemic in Singapore: challenges in determining a SARS diagnosis', *Arch Pathol Lab Med*, 128(2), pp. 195–204. Available at: [https://doi.org/10.1043/1543-2165\(2004\)128<195:AODDTS>2.0.CO;2](https://doi.org/10.1043/1543-2165(2004)128<195:AODDTS>2.0.CO;2).
- Christensen, B. *et al.* (2020) 'Hematology Laboratory Abnormalities in Patients with Coronavirus Disease 2019 (COVID-19)', *Seminars in Thrombosis and Hemostasis*, 46(7), pp. 845–849. Available at: <https://doi.org/10.1055/s-0040-1715458>.
- Conte, C. *et al.* (2021) 'Epicardial adipose tissue characteristics, obesity and clinical outcomes in COVID-19: A post-hoc analysis of a prospective cohort study', *Nutrition, Metabolism and Cardiovascular Diseases*, 31(7), pp. 2156–2164.

Available at: <https://doi.org/10.1016/j.numecd.2021.04.020>.

- Cooper, L.T. (2010) 'Myocarditis', *The New England Journal of Medicine*, 11(3), pp. 369–373.
- Das, S.K. (2020) 'The Pathophysiology, Diagnosis and Treatment of Corona Virus Disease 2019 (COVID-19)', *Indian Journal of Clinical Biochemistry*, 35(4), pp. 385–396. Available at: <https://doi.org/10.1007/s12291-020-00919-0>.
- Derya, M.A. *et al.* (2018) 'Relationship between neutrophil/lymphocyte ratio and epicardial fat tissue thickness in patients with newly diagnosed hypertension', *Journal of International Medical Research*, 46(3), pp. 940–950. Available at: <https://doi.org/10.1177/0300060517749130>.
- Dhakal, B.P. *et al.* (2020) 'SARS-CoV-2 Infection and Cardiovascular Disease: COVID-19 Heart', *Heart, Lung and Circulation*, 29(January), pp. 973–987.
- European Society of cardiology (2020) 'ESC Guidance for the Diagnosis and Management of CV Disease during the COVID-19 Pandemic', *European heart journal*, pp. 1–115.
- Grodecki, K. *et al.* (2020) 'Epicardial adipose tissue is associated with extent of pneumonia and adverse outcomes in patients with COVID-19', *Metabolism Clinical and Experimental*, 115(154436), pp. 1–8. Available at: <https://doi.org/https://doi.org/10.1016/j.metabol.2020.154436>.
- Guan, W. *et al.* (2020) 'Clinical Characteristics of Coronavirus Disease 2019 in China', *New England Journal of Medicine*, 382(18), pp. 1708–1720. Available at: <https://doi.org/10.1056/nejmoa2002032>.
- Guzik, T.J. *et al.* (2020) 'COVID-19 and the cardiovascular system: Implications for risk assessment, diagnosis, and treatment options', *Cardiovascular Research*, 116(10), pp. 1666–1687. Available at: <https://doi.org/10.1093/cvr/cvaa106>.
- Hemalatha Rajkumar, P.B. (2013) 'The Impact of Obesity on Immune Response to Infection and Vaccine: An Insight into Plausible Mechanisms', *Endocrinology & Metabolic Syndrome*, 02(02). Available at: <https://doi.org/10.4172/2161-1017.1000113>.
- Hendren, N.S. *et al.* (2020) 'Description and Proposed Management of the Acute COVID-19 Cardiovascular Syndrome', *Circulation*, 141(23), pp. 1903–1914. Available at: <https://doi.org/10.1161/CIRCULATIONAHA.120.047349>.
- Huang, C. *et al.* (2020) 'Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China', *The Lancet*, 395(10223), pp. 497–506. Available at: [https://doi.org/https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/https://doi.org/10.1016/S0140-6736(20)30183-5).
- Iacobellis, G. *et al.* (2020) 'Epicardial Fat Inflammation in Severe COVID-19', *Obesity*, 28(12), pp. 2260–2262. Available at: <https://doi.org/10.1002/oby.23019>.
- Iacobellis, G. and Malavazos, A.E. (2020) 'COVID-19 rise in Younger adults with Obesity: Visceral Adiposity can predict the Risk', *Obesity (Silver Spring)*, 10, pp. 0–1. Available at: <https://doi.org/10.1002/oby.22951>.

- Jafarzadeh, A. *et al.* (2021) 'Lymphopenia an important immunological abnormality in patients with COVID-19: Possible mechanisms', *Scandinavian Journal of Immunology*, 93(2), pp. 1–16. Available at: <https://doi.org/10.1111/sji.12967>.
- Kim, I. (2020) 'Epicardial adipose tissue : fuel for COVID-19- induced cardiac injury?', *European Heart Journal*, 00, pp. 1–2. Available at: <https://doi.org/10.1002/oby.22831...>
- Kosmeri, C. *et al.* (2020) 'Hematological manifestations of SARS-CoV-2 in children', *Pediatric Blood and Cancer*, 67(12). Available at: <https://doi.org/10.1002/pbc.28745>.
- Kurtul, A., Murat, S.N., *et al.* (2014) 'Association of platelet-to-lymphocyte ratio with severity and complexity of coronary artery disease in patients with acute coronary syndromes', *American Journal of Cardiology*, 114(7), pp. 972–978. Available at: <https://doi.org/10.1016/j.amjcard.2014.07.005>.
- Kurtul, A., Yarlioglu, M., *et al.* (2014) 'Usefulness of the platelet-to-lymphocyte ratio in predicting angiographic reflow after primary percutaneous coronary intervention in patients with acute st-segment elevation myocardial infarction', *American Journal of Cardiology*, 114(3), pp. 342–347. Available at: <https://doi.org/10.1016/j.amjcard.2014.04.045>.
- Kurtul, A. and Ornek, E. (2019) 'Platelet to Lymphocyte Ratio in Cardiovascular Diseases: A Systematic Review', *Angiology*, 70(9), pp. 802–818. Available at: <https://doi.org/10.1177/0003319719845186>.
- Li, W. *et al.* (2017) 'Platelet to lymphocyte ratio in the prediction of adverse outcomes after acute coronary syndrome: A meta-analysis', *Scientific Reports*, 7(December 2016), pp. 1–9. Available at: <https://doi.org/10.1038/srep40426>.
- Madjid, M. *et al.* (2020) 'Potential Effects of Coronaviruses on the Cardiovascular System: A Review', *JAMA Cardiology*, pp. 831–840. Available at: <https://doi.org/10.1001/jamacardio.2020.1286>.
- Malavazos, A.E. *et al.* (2020) 'Does epicardial fat contribute to COVID-19 myocardial inflammation?', *European Heart Journal*, 41(24), p. 2333. Available at: <https://doi.org/10.1093/eurheartj/ehaa471>.
- Manuhutu, R. (2021) *Situasi Terkini Perkembangan Coronavirus Disease (COVID-19) 31 Mei 2021, Kementerian Kesehatan Republik Indonesia*. Available at: <https://infeksiemerging.kemkes.go.id/situasi-infeksi-emerging/situasi-terkini-perkembangan-coronavirus-disease-covid-19-31-mei-2021> (Accessed: 30 June 2021).
- Marcucci, M. *et al.* (2022) 'Cut-off point of CT-assessed epicardial adipose tissue volume for predicting worse clinical burden of SARS-CoV-2 pneumonia', *Emergency Radiology*, 29(4), pp. 645–653. Available at: <https://doi.org/10.1007/s10140-022-02059-9>.
- Mousavizadeh, L. and Ghasemi, S. (2020) 'Genotype and phenotype of COVID-19: Their roles in pathogenesis', *Journal of Microbiology, Immunology and Infection*, (xxxx), pp. 0–4. Available at: <https://doi.org/10.1016/j.jmii.2020.03.022>.

- Mozaffarian, D. *et al.* (2015) *Heart disease and stroke statistics-2015 update : A report from the American Heart Association, Circulation*. Available at: <https://doi.org/10.1161/CIR.000000000000152>.
- Ornelas-Ricardo, D. and Jaloma-Cruz, A.R. (2020) 'Coronavirus Disease 2019: Hematological Anomalies and Antithrombotic Therapy', *The Tohoku journal of experimental medicine*, 251(4), pp. 327–336. Available at: <https://doi.org/10.1620/tjem.251.327>.
- Ozcan Cetin, E.H. *et al.* (2016) 'Platelet to lymphocyte ratio as a prognostic marker of in-hospital and long-term major adverse cardiovascular events in ST-segment elevation myocardial infarction', *Angiology*, 67(4), pp. 336–345. Available at: <https://doi.org/10.1177/0003319715591751>.
- Qu, R. *et al.* (2020) 'Platelet-to-lymphocyte ratio is associated with prognosis in patients with coronavirus disease-19', *Journal of Medical Virology*, 92(9), pp. 1533–1541. Available at: <https://doi.org/10.1002/jmv.25767>.
- Ryan, P.M.D. and Caplice, N.M. (2020) 'Is Adipose Tissue a Reservoir for Viral Spread, Immune Activation, and Cytokine Amplification in Coronavirus Disease 2019?', *Obesity*, 28(7), pp. 1191–1194. Available at: <https://doi.org/10.1002/oby.22843>.
- Rychter, A.M. *et al.* (2020) 'Should patients with obesity be more afraid of COVID-19?', *Obesity Reviews*, 21(9), pp. 1–8. Available at: <https://doi.org/10.1111/obr.13083>.
- S., P. and Patil, N. (2021) 'Study correlating lymphocyte to monocyte ratio and platelet to lymphocyte ratio with the severity in COVID-19 patients: a cross sectional study', *International Journal of Advances in Medicine*, 8, p. 201. Available at: <https://doi.org/10.18203/2349-3933.ijam20210264>.
- Schiavone, M. *et al.* (2020) 'Acute Coronary Syndromes and Covid-19: Exploring the Uncertainties', *Journal of Clinical Medicine*, 9(6), p. 1683. Available at: <https://doi.org/10.3390/jcm9061683>.
- Sevilla, T. *et al.* (2022) '[Epicardial adipose tissue attenuation in admitted patients with COVID-19].', *Revista espanola de cardiologia*. Spain, pp. 98–100. Available at: <https://doi.org/10.1016/j.recesp.2021.07.005>.
- Seyit, M. *et al.* (2020) 'Neutrophil to lymphocyte ratio, lymphocyte to monocyte ratio and platelet to lymphocyte ratio to predict the severity of COVID-19', *American Journal of Emergency Medicine*, 40, pp. 110–114. Available at: <https://doi.org/10.1016/j.ajem.2020.11.058>.
- Simadibrata, D.M., Pandhita, B.A.W., *et al.* (2020) 'Platelet-to-lymphocyte ratio, a novel biomarker to predict the severity of COVID-19 patients: A systematic review and meta-analysis', *Journal of the Intensive Care Society* [Preprint], (Vi). Available at: <https://doi.org/10.1177/1751143720969587>.
- Simadibrata, D.M., Adi, B., *et al.* (2020) 'Platelet-to-lymphocyte ratio (PLR), a novel biomarker to predict the severity of COVID-19 patients : a systematic review and meta-analysis Authors 1 . Faculty of Medicine , Universitas Indonesia , Jakarta , Indonesia # Equal Contribution Correspondence ', (Vi), pp. 1–22.

- Sun, X.P. *et al.* (2018) 'Platelet to Lymphocyte Ratio Predicts Contrast-Induced Nephropathy in Patients With ST-Segment Elevation Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention', *Angiology*, 69(1), pp. 71–78. Available at: <https://doi.org/10.1177/0003319717707410>.
- Sy, A. and Rout, A. (2020) 'Use of Neutrophil-to-Lymphocyte and Platelet-to-Lymphocyte Ratios in COVID-19', 12(7), pp. 448–453.
- Tajbakhsh, A. *et al.* (2021) *COVID-19 and cardiac injury: clinical manifestations, biomarkers, mechanisms, diagnosis, treatment, and follow up, Expert Review of Anti-Infective Therapy*. Taylor & Francis. Available at: <https://doi.org/10.1080/14787210.2020.1822737>.
- Temiz, A. *et al.* (2014) 'Platelet/lymphocyte ratio and risk of in-hospital mortality in patients with ST-elevated myocardial infarction', *Medical Science Monitor*, 20, pp. 660–665. Available at: <https://doi.org/10.12659/MSM.890152>.
- Ugur, M. *et al.* (2014) 'The relationship between platelet to lymphocyte ratio and the clinical outcomes in ST elevation myocardial infarction underwent primary coronary intervention', *Blood Coagulation and Fibrinolysis*, 25(8), pp. 806–811. Available at: <https://doi.org/10.1097/MBC.000000000000150>.
- Wang, D. *et al.* (2020) 'Clinical Characteristics of 138 Hospitalized Patients with 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China', *JAMA - Journal of the American Medical Association*, 323(11), pp. 1061–1069. Available at: <https://doi.org/10.1001/jama.2020.1585>.
- Wei, Z. *et al.* (2021) 'Pre-existing Health Conditions and Epicardial Adipose Tissue Volume : Potential Risk Factors for Myocardial Injury in COVID-19 Patients', 7, pp. 1–10. Available at: <https://doi.org/10.3389/fcvm.2020.585220>.
- Willim, H.A. *et al.* (2021) 'Platelet-to-Lymphocyte Ratio at Admission as a Predictor of In-Hospital and Long-Term Outcomes in Patients With ST-Segment Elevation Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention: A Systematic Review and Meta-Analysis', *Cardiology Research*, 12(2), pp. 109–116. Available at: <https://doi.org/10.14740/cr1219>.
- Yamada, T. *et al.* (2020) 'Value of leukocytosis and elevated C-reactive protein in predicting severe coronavirus 2019 (COVID-19): A systematic review and meta-analysis', *Clinica Chimica Acta*, 509, pp. 235–243. Available at: <https://doi.org/10.1016/j.cca.2020.06.008>.
- Yang, A.-P. *et al.* (2020) 'The diagnostic and predictive role of NLR, d-NLR and PLR in COVID-19 patients', *International immunopharmacology*. 2020/04/13, 84, p. 106504. Available at: <https://doi.org/10.1016/j.intimp.2020.106504>.
- Yayla, Ç. *et al.* (2015) 'Platelet to Lymphocyte Ratio Can be a Predictor of Infarct-Related Artery Patency in Patients with ST-Segment Elevation Myocardial Infarction', *Angiology*, 66(9), pp. 831–836. Available at: <https://doi.org/10.1177/0003319715573658>.
- Yildiz, A. *et al.* (2015) 'The utility of the platelet-lymphocyte ratio for predicting no reflow in patients with ST-segment elevation myocardial infarction', *Clinical and Applied*

Thrombosis/Hemostasis, 21(3), pp. 223–228. Available at: <https://doi.org/10.1177/1076029613519851>.

Zhao, Y. *et al.* (2021) 'COVID-19 letter to the editor: Epicardial fat inflammation as possible enhancer in COVID-19?', *Metabolism: clinical and experimental*, 117, p. 154722. Available at: <https://doi.org/10.1016/j.metabol.2021.154722>.

Zheng, Y.-Y. *et al.* (2019) 'COVID-19 and the cardiovascular system', *Nature Reviews Cardiology* [Preprint]. Available at: <https://doi.org/10.1038/s41569-020-0360-5>.

Lampiran 1



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI
 UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
 KOMITE ETIK PENELITIAN UNIVERSITAS HASANUDDIN
 RSPTN UNIVERSITAS HASANUDDIN
 RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR
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**REKOMENDASI PERSETUJUAN ETIK**

Nomor : 569/UN4.6.4.5.31/ PP36/ 2022

Tanggal: 6 Oktober 2022

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH22070387	No Sponsor Protokol	
Peneliti Utama	dr. Jacky Hartanto Tungadi	Sponsor	
Judul Peneliti	Analisis Rasio Platelet Limfosit (PLR) dan Densitas Lemak Epikardial Pada Pasien Pneumonia Corona Virus Disease-19 Derajat Sedang dan Berat dengan Sindrom Koroner Akut		
No Versi Protokol	2	Tanggal Versi	26 September 2022
No Versi PSP	2	Tanggal Versi	26 September 2022
Tempat Penelitian	RSUP Dr. Wahidin Sudirohusodo Makassar		
Jenis Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal	Masa Berlaku 6 Oktober 2022 sampai 6 Oktober 2023	Frekuensi review lanjutan
Ketua KEP Universitas Hasanuddin	Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)	Tanda tangan	
Sekretaris KEP Universitas Hasanuddin	Nama dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K)	Tanda tangan	

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 Jam setelah Peneliti Utama menerima laporan
- Menyerahkan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyerahkan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari protokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan