

DAFTAR PUSTAKA

1. Bu X, Zhang L, Chen P, Wu X. Relation of neutrophil-to-lymphocyte ratio to acute kidney injury in patients with sepsis and septic shock: A retrospective study. *Int Immunopharmacol.* 2019;70:372-377.
2. R. Alobaidi, R.K. Basu, S.L. Goldstein, S.M. Bagshaw, Sepsis-associated acute kidney injury, *Semin. Nephrol.* 35 (1) 2015;2–11.
3. Vincent JL, Sakr Y, Sprung CL, et al. Sepsis in European intensive care units: results of the SOAP study. *Crit Care Med.* 2006;34:344–353.
4. Peerapornratana S, Manrique-Caballero CL, Gómez H, Kellum JA. Acute kidney injury from sepsis: current concepts, epidemiology, pathophysiology, prevention and treatment. *Kidney Int.* 2019;96(5):1083-1099.
5. Fiorentino M, Tohme FA, Wang S, et al. Long-term survival in patients with septic acute kidney injury is strongly influenced by renal recovery. *PLoS One.* 2018;13:e0198269.
6. Tubaro M, Franckx P. The ESC Textbook of Intensive and Acute Cardiovascular Care. Oxford university Press. Oxford : 2021; p-338.
7. D.S. Heffernan, S.F. Monaghan, R.K. Thakkar, J.T. Machan, W.G. Cioffi, A. Ayala, Failure to normalize lymphopenia following trauma is associated with increased mortality, independent of the leukocytosis pattern, *Crit. Care* 16 (1). 2012;R12.
8. A.M. Drewry, N. Samra, L.P. Skrupky, B.M. Fuller, S.M. Compton, R.S. Hotchkiss, Persistent lymphopenia after diagnosis of sepsis predicts mortality, *Shock* 42 (5) 2014;383–91.
9. Yilmaz H, Cakmak M, Inan O, Darcin T, Akcay A. Can neutrophil-lymphocyte ratio be independent risk factor for predicting acute kidney injury in patients with severe sepsis? *Ren Fail.* 2015;37(2):225-9.
10. Prado V, Wakefield C, Asharaf A, Nasim R, et al. Association of neutrophil-lymphocyte ratio and acute kidney injury in septic patients in the icu. *Chest Journal.* 2020;158:1-2.
11. Chen, JJ., Kuo, G., Fan, PC. et al. Neutrophil-to-lymphocyte ratio is a marker for acute kidney injury progression and mortality in critically ill populations: a population-based, multi-institutional study. *J Nephrol.* 2022;35, 911–920.
12. Kellum JA, Prowle JR. Paradigms of acute kidney injury in the intensive care setting. *Nat Rev Nephrol [Internet].* 2018;14(4):217–30. Available from: <http://dx.doi.org/10.1038/nrneph.2017.184>
13. Alkhunaizi AL. Acute Kidney Injury. Intech. 2016;i(tourism):13.
14. Georgi Abraham NV. AKI in ICU – Diagnosis and Management. 2017; Available from: http://www.apiindia.org/pdf/medicine_update_2017/mu_123.pdf
15. Gameiro J, Fonseca JA, Jorge S, Lopes JA. Acute kidney injury definition and diagnosis: A narrative review. *J Clin Med.* 2018;7(10):1–13.
16. Melyda. Diagnosis dan Tataaksana Acute Kidney Injury (AKI) pada Syok Septik. Cdk-259. 2017;44(12):907–8.
17. Griffin BR, Liu KD, Teixeira JP. Critical Care Nephrology: Core Curriculum 2020. *Am J Kidney Dis.* 2020;75(3):435–52.
18. Jameson JL, Fauci AS, Kasper DL, Hauser SL, Longo DL, Loscalzo J. Harrison's Principles of Internal Medicine. 20th ed. Jameson JL, editor. New York: McGraw-Hill Education; 2018.

19. Fatoni AZ, Kestriani ND. Acute Kidney Injury (AKI) pada Pasien Kritis. Maj Anest dan Crit Care. 2018;36(2):64–75.
20. Makris K, Spanou L. Acute Kidney Injury : Definition , Pathophysiology and Clinical Phenotypes. 2016;37(2):85–98.
21. Kulkarni AP, Bhosale SJ. Epidemiology and pathogenesis of acute kidney injury in the critically ill patients. Indian J Crit Care Med. 2020;24(June):S84–9.
22. David S, Tillman M, Pawasauskas J, Todd Brothers. Nonsteroidal anti-inflammatory drug induced acute kidney injury; A review and case study. J Ren Inj Prev. 2020;9(4):1–7.
23. Mohsenin V. Practical approach to detection and management of acute kidney injury in critically ill patient. J Intensive Care. 2017;5(1):1–8.
24. Hidayat H, Pradian E, Kestriani ND. Angka Kejadian, Lama Rawat, dan Mortalitas Pasien Acute Kidney Injury di ICU RSUP Dr. Hasan Sadikin Bandung. J Anestesi Perioper. 2020;8(2):108–18.
25. Ostermann M. Acute kidney injury 2016 : diagnosis and diagnostic workup. Crit Care [Internet]. 2016;1–13. Available from: <http://dx.doi.org/10.1186/s13054-016-1478-z>
26. Singer M, Deutschman CS, Seymour CW, et al. The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). JAMA. 2016;315(8):801-810.
27. Vincent JL, Opal SM, Marshall JC, Tracey KJ. Sepsis definitions: time for change. Lancet. 2013;381(9868):774–775.
28. Gyawali B, Ramakrishna K, Dhamoon AS. Sepsis: The evolution in definition, pathophysiology, and management. SAGE Open Med. 2019;7:2050312119835043. Published 2019 Mar 21. doi:10.1177/2050312119835043
29. Remick DG. Pathophysiology of sepsis. Am J Pathol 2007; 170(5): 1435–1444.
30. Esmon CT. The interactions between inflammation and coag- ulation. Br J Haematol 2005; 131(4): 417–430.
31. Heagy W, Hansen C, Nieman K, et al. Impaired ex vivo lipopolysaccharide-stimulated whole blood tumor necrosis factor production may identify “septic” intensive care unit patients. Shock 2000; 14(3): 271–276.
32. Vincent JL, de Mendonça A, Cantraine F, et al. Working Group on "Sepsis-Related Problems" of the European Society of Intensive Care Medicine. Use of the SOFA score to assess the incidence of organ dysfunction/failure in intensive care units: results of a multicenter, prospective study. Crit Care Med. 1998;26(11):1793–1800.
33. Ferreira FL, Bota DP, Bross A, et al. Serial evaluation of the SOFA score to predict outcome in critically ill patients. JAMA. 2001;286(14):1754-8.
34. Anjana, D. (2017) 'A Comparative study of APACHE II and SOFA Scoring Systems in Critically ill Patients with Sepsis', 5139, pp. 4–6.
35. Honore PM, Jacobs R, Hendrickx I, Bagshaw SM, Joannes-Boyau O, Boer W, et al. Prevention and treatment of sepsis-induced acute kidney injury: an update. Ann Intensive Care. 2015;5(1):1–10.
36. Gómez H, Kellum JA. Sepsis-induced acute kidney injury Hernando. Curr Opin Crit Care. 2017;176(5):139–48.
37. Peerapornratana S, Manrique-Caballero CL, Gómez H, Kellum JA. Acute kidney injury from sepsis: current concepts, epidemiology, pathophysiology, prevention and treatment. Kidney Int. 2019 Nov;96(5):1083-1099.
38. Hidayat H, Pradian E, Kestriani ND. Angka Kejadian, Lama Rawat, dan

- Mortalitas Pasien Acute Kidney Injury di ICU RSUP Dr. Hasan Sadikin Bandung. *J Anestesi Perioper.* 2020;8(2):108–18.
39. Martins, Eduarda Cristina et al. Neutrophil-lymphocyte ratio in the early diagnosis of sepsis in an intensive care unit: a case-control study. *Revista Brasileira de terapia intensiva.* 2019;64-70.
 40. Shen X, Cao K, Zhao Y, Du J. Targeting Neutrophils in Sepsis: From Mechanism to Translation. *Front Pharmacol.* 2021;12:644270.
 41. Jiang Jie Du, Huimin MD^b; Su, Yanxin PhD^a; Li, Xin MM^c; Zhang, Jing MM^a; Chen, Meihao MM^a; Ren, Guosheng MD^d; He, Faming MM^{a,*}; Niu, Bailin MD^{a,*} Nonviral infection-related lymphocytopenia for the prediction of adult sepsis and its persistence indicates a higher mortality, *Medicine:* 2019;16535.
 42. Aziz M, Jacob A, Yang WL, Matsuda A, Wang P. Current trends in inflammatory and immunomodulatory mediators in sepsis. *J Leukoc Biol.* 2013 Mar;93(3):329-42.
 43. Vahedi SMH, Bagheri A, Jahanshir A, Seyedhosseini J, Vahidi E. Association of Lymphopenia with Short Term Outcomes of Sepsis Patients; a Brief Report. *Arch Acad Emerg Med.* 2019;7(1):e14.
 44. Martins, Eduarda Cristina et al. Neutrophil-lymphocyte ratio in the early diagnosis of sepsis in an intensive care unit: a case-control study. *Revista Brasileira de terapia intensiva.* 2019;64-70.
 45. Hwang SY, Shin TG, Jo IJ, Jeon K, Suh GY, Lee TR, Yoon H, Cha WC, Sim MS. Neutrophil-to-lymphocyte ratio as a prognostic marker in critically-ill septic patients. *Am J Emerg Med.* 2017 Feb;35(2):234-239.
 46. de Jager CP, van Wijk PT, Mathoera RB, de Jongh-Leuvenink J, van der Poll T, Wever PC, et al. Lymphocytopenia and neutrophil-lymphocyte count ratio predict bacteremia better than conventional infection markers in an emergency care unit. *Crit Care* 2010;14:R192.
 47. Nugroho A, Suwarman S, Nawawi AM. Hubungan antara Rasio Neutrofil-Limfosit dan Skor Sequencial Organ Failure Assesment pada Pasien yang Dirawat di Ruang Intensive Care Unit. *J. Anestesi Perioperatif,* 2013;3:189-196.
 48. Arif SK, Rukka ABS, Wahyuni S. Comparison of Neutrophils-lymphocytes Ratio and Procalcitonin Parameters in Sepsis Patient Treated in Intensive Care Unit Dr. Wahidin Hospital, Makassar, Indonesia. *J. Med. Sci.,* 17 (1): 17-21
 49. Lee SA, Noel S, Sadasivam M, Hamad ARA, Rabb H. Role of Immune Cells in Acute Kidney Injury and Repair. *Nephron.* 2017;137(4):282-286.
 50. Radi ZA. Immunopathogenesis of Acute Kidney Injury. *Toxicol Pathol.* 2018 Dec;46(8):930-943.
 51. H.R. Jang, H. Rabb, Immune cells in experimental acute kidney injury, *Nat. Rev. Nephrol.* 11 (2) (2015) 88–101.
 52. K.M. Rouschop, J.J. Roelofs, N. Claessen, P. da Costa Martins, J.J. Zwaginga, S.T. Pals, J.J. Weening, S. Florquin, Protection against renal ischemia reperfusion injury by CD44 disruption, *J. Am. Soc. Nephrol.* 16(7) (2005) 2034–43.
 53. Xie T, Xin Q, Chen R, Zhang X, Zhang F, Ren H, Liu C, Zhang J. Clinical Value of Prognostic Nutritional Index and Neutrophil-to-Lymphocyte Ratio in Prediction of the Development of Sepsis-Induced Kidney Injury. *Dis Markers.* 2022 Jun 7;2022:1449758.
 54. Harjana LT, Rahardjo E, Purnomo W, Herawati L, Rehatta NM. The Higher Level of Neutrophil – Lymphocyte Ratio (NLR) and Serum Syndecan-1 Based on Timeline (First, Sixth, and Twenty-Fourth Hour) in Sepsis-

- Induced Acute Kidney Injury. Indian Journal of Forensic Medicine & Toxicology. November 2020. 16(1), 727–733.
55. Lendak D, Adamovic S, Becejac D, Boban J, Brkic S. Neutrophil-lymphocyte ratio is a predictor of sepsis-induced acute kidney injury. In : Prosiding European Congress and Clinical Microbiology and Infectious Disease. 2018. p. 1-2.
 56. Wan L, Bagshaw SM, Langenberg C, Saotome T, May C, Bellomo R. Pathophysiology of septic acute kidney injury: What do we really know? Crit Care Med. 2008;36(Suppl. 4):S198–S203.
 57. Sharfuddin AA, Molitoris BA. Pathophysiology of ischemic acute kidney injury. Nat Rev Nephrol. 2011;7(4):189–200.
 58. Bhat T, Teli S, Rijal J, et al. Neutrophil to lymphocyte ratio and cardiovascular diseases: A review. Expert Rev Cardiovasc Ther. 2013;11(1):55–59.
 59. Chawla LS, Seneff MG, Nelson DR, et al. Elevated plasma concentrations of IL-6 and elevated APACHE II score predict acute kidney injury in patients with severe sepsis. Clin J Am Soc Nephrol. 2007;2(1):22–30.
 60. Nie X, Wu B, He Y, et al. Serum procalcitonin predicts development of acute kidney injury in patients with suspected infection. Clin Chem Lab Med. 2013;51(8):1655–1661.
 61. Siew ED, Ware LB, Ikizler TA. Biological markers of acute kidney injury. J Am Soc Nephrol. 2011;22(5):810–820.
 62. Siew ED, Ware LB, Bian A, et al. Distinct injury markers for the early detection and prognosis of incident acute kidney injury in critically ill adults with preserved kidney function. Kidney Int. 2013;84(4):786–794.
 63. Kane-Gill, S. L. et al. (2015) 'Risk factors for acute kidney injury in older adults with critical illness: A retrospective cohort study', American Journal of Kidney Diseases, 65(6), pp. 860–9. doi: 10.1053/j.ajkd.2014.10.018.
 64. Himmelfarb, J. (2009) 'Acute Kidney Injury in the Elderly: Problems and Prospects', Seminars in Nephrology, 29(6), pp. 658–64. doi: 10.1016/j.semephrol.2009.07.008.
 65. Ju, S. et al. (2018) 'Body mass index as a predictor of acute kidney injury in critically ill patients: A retrospective single-center study', Tuberculosis and Respiratory Diseases, 81(4), pp. 311–18. doi: 10.4046/trd.2017.0081.
 66. Soto, G. J. et al. (2012) 'Body mass index and acute kidney injury in the acute respiratory distress syndrome', Critical Care Medicine, 40(9), pp. 2601–8. doi: 10.1097/CCM.0b013e3182591ed9.
 67. Chagnac, A. et al. (2000) 'Glomerular hemodynamics in severe obesity', American Journal of Physiology - Renal Physiology, 278(5), pp. F817-22. doi: 10.1152/ajprenal.2000.278.5.f817.
 68. Shum HP, Kong HH, Chan KC, Yan WW, Chan TM. Septic acute kidney injury in critically ill patients - a single-center study on its incidence, clinical characteristics, and outcome predictors. Ren Fail. 2016 Jun;38(5):706-16.
 69. Nandagopal N, Reddy PK, Ranganathan L, Ramakrishnan N, Annigeri R, Venkataraman R. Comparison of Epidemiology and Outcomes of Acute Kidney Injury in Critically Ill Patients with and without Sepsis. Indian J Crit Care Med. 2020 Apr;24(4):258-262.
 70. Bagshaw SM, Uchino S, Bellomo R, Morimatsu H, Morgera S, Schetz M, et al. Beginning and ending supportive therapy for the kidney (BEST kidney) investigators. Septic acute kidney injury in critically-ill patients: clinical characteristics and outcomes. Clin J Am SocNephrol. 2007;2(3):431–439.

71. Zahorec R (2001) Ratio of neutrophil to lymphocyte counts—rapid and simple parameter of systemic inflammation and stress in critically ill. *Bratisl Lek Listy* 102(1):5–14.
72. Benschop RJ, Rodriguez-Feuerhahn M, Schedlowski M (1996) Catecholamine-induced leukocytosis: early observations, current research, and future directions. *Brain Behav Immun* 10(2):77–91.
73. KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. 2013 (3).
74. Y. Solak, M.I. Yilmaz, A. Sonmez, M. Saglam, E. Cakir, H.U. Unal, M. Gok, K. Caglar, Y. Oguz, M. Yenicesu, M. Karaman, S.A. Ay, A. Gaipov, S. Turk, A. Vural, J.J. Carrero, Neutrophil to lymphocyte ratio independently predicts cardiovascular events in patients with chronic kidney disease, *Clin. Exp. Nephrol.* 17 (4) (2013) 532–540.
75. I. Kocyigit, E. Eroglu, A. Unal, M.H. Sipahioglu, B. Tokgoz, O. Oymak, C. Utas, Role of neutrophil/lymphocyte ratio in prediction of disease progression in patients with stage-4 chronic kidney disease, *J. Nephrol.* 26 (2) (2013) 358–365.
76. S. Tonyali, C. Ceylan, S. Yahsi, M.S. Karakan, Does neutrophil to lymphocyte ratio demonstrate deterioration in renal function? *Ren. Fail.* 40 (1) (2018) 209–212.
77. Bhatraju PK, Zelnick LR, Chinchilli VM, Moledina DG, Coca SG, Parikh CR, Garg AX, Hsu CY, Go AS, Liu KD, Ikizler TA, Siew ED, Kaufman JS, Kimmel PL, Himmelfarb J, Wurfel MM. Association Between Early Recovery of Kidney Function After Acute Kidney Injury and Long-term Clinical Outcomes. *JAMA Netw Open.* 2020 Apr 1;3(4):e202682.
78. Mohsenin V. Practical approach to detection and management of acute kidney injury in critically ill patient. *J Intensive Care.* 2017 Sep 16;5:57.
79. A. N. Drăgoescu, V. Pădureanu, A. D. Stănculescu et al., “Neutrophil to Lymphocyte Ratio (NLR)—A Useful Tool for the Prognosis of Sepsis in the ICU,” *Biomedicine*, vol. 10, no. 1, p. 75, 2022.
80. E. Kolaczkowska and P. Kubes, “Neutrophil recruitment and function in health and inflammation,” *Nature Reviews. Immunology*, vol. 13, no. 3, pp. 159–175, 2013.
81. Bi JB, Zhang J, Ren YF, Du ZQ, Wu Z, Lv Y, Wu RQ. Neutrophil-to-lymphocyte ratio predicts acute kidney injury occurrence after gastrointestinal and hepatobiliary surgery. *World J Gastrointest Surg.* 2020 Jul 27;12(7):326-335.