

DAFTAR PUSTAKA

- Adane, T., Melku, M., Worku, Y. B., Fasil, A., Aynalem, M., Kelem, A. *et al.* 2023. The Association between Neutrophil-to-Lymphocyte Ratio and Glycemic Control in Type 2 Diabetes Mellitus: A Systematic Review and Meta-Analysis. *Journal of Diabetes Research*. 23(1): 3117396.
- Akhtar, S., Nasir, J. A., Aqsa, A., Asghar, M., Majeed, R., & Sarwar, A. 2022. Prevalence of Type-2 Diabetes and Prediabetes in Malaysia: A Systematic Review and Meta-Analysis. *Plos One*. 1(1): 1–14.
- Akin, S., Aydin, Z., Yilmaz, G., Aliustaoglu, M., & Keskin, O. 2019. Evaluation of The Relationship Between Glycaemic Regulation Parameters and Neutrophil-to-Lymphocyte Ratio in Type 2 Diabetic Patients. *EMJ Diabetes*. 7(1): 91–96.
- Akselrod, D., Friger, M., & Biderman, A. 2021. HbA1C variability among type 2 diabetic patients: a retrospective cohort study. *Diabetology & Metabolic Syndrome*. 13(1): 101-110.
- Alzamil, H. 2020. Elevated Serum TNF- α Is Related to Obesity in Type 2 Diabetes Mellitus and Is Associated with Glycemic Control and Insulin Resistance. *Journal of Obesity*. 20(1): 5076858.
- American Diabetes Association. 2018. Classification and Diagnosis of Diabetes: Standards of Medical Care in Diabetes. *Diabetes Care*. 41(1): 13–27.
- American Diabetes Association. 2019. Glycemic Targets: Standards of Medical Care in Diabetes-2019. *Diabetes Care*. 42(1): S61–S70.
- American Diabetes Association. 2020. Glycemic targets: standards of medical care in diabetes. *Diabetes Care*. 43(1): S66–S76.
- American Diabetes Association Professional Practice Committee. 2021. Classification and Diagnosis of Diabetes: Standards of Medical Care in Diabetes. *Diabetes Care*. 45(1): S17–S38.
- Ang, S. H., Thevarajah, M., Alias, Y., & Khor, S. M. 2015. Current aspects in hemoglobin A1c detection: a review. *Clinica Chimica Acta; International Journal of Clinical Chemistry*. 439(1): 202–211.
- Anggoro, W. A. 2019. Korelasi Kadar HbA1c dengan Nilai NLR Pada Penderita Diabetes Melitus Tipe 2. In *Skripsi*. Yogyakarta: Universitas Muhammadiyah

Yogyakarta.

- Arneth, B. 2024. Mechanisms of Insulin Resistance in Patients with Obesity. *Endocrines*. 5(2): 153–165.
- Ashraf, H., Laway, B. A., Afroze, D., & Wani, A. I. 2018. Evaluation of proinflammatory cytokines in obese vs non-obese patients with metabolic syndrome. *Indian Journal of Endocrinology and Metabolism*. 22(6): 751–756.
- Aswath, G. S., Foris, L. A., Ashwath, A. K., & Patel, K. 2023. Diabetic Gastroparesis. In *StatPearls [Internet]*. Treasure Island (FL): StatPearls Publishing.
- Bagyura, Z., Kiss, L., Lux, Á., Csobay-Novák, C., Jermendy, Á. L., Polgár, L. *et al.* 2023. Neutrophil-to-Lymphocyte Ratio Is an Independent Risk Factor for Coronary Artery Disease in Central Obesity. *International Journal of Molecular Sciences*. 24(8): 1–10.
- Bahiru, E., Hsiao, R., Phillipson, D., & Watson, K. E. 2021. Mechanisms and Treatment of Dyslipidemia in Diabetes. *Current Cardiology Reports*. 23(4): 26.
- Banday, M. Z., Sameer, A. S., & Nissar, S. 2020. Pathophysiology of diabetes: An overview. *Avicenna Journal of Medicine*. 10(4): 174–188.
- Bengtsson, E., Hultman, K., Edsfeldt, A., Persson, A., Nitulescu, M., Nilsson, J. *et al.* 2020. CD163+ macrophages are associated with a vulnerable plaque phenotype in human carotid plaques. *Scientific Reports*. 10(1): 14362.
- Bhattacharyya, S., Jain, N., Verma, H., & Sharma, K. 2021. A Cross-sectional Study to Assess Neutrophil Lymphocyte Ratio as a Predictor of Microvascular Complications in Type 2 Diabetes Mellitus Patients. *Journal of Clinical and Diagnostic Research*. 15(8): 59–62.
- Bonetto, S., Gruden, G., Beccuti, G., Ferro, A., Saracco, G. M., & Pellicano, R. 2021. Management of Dyspepsia and Gastroparesis in Patients with Diabetes. A Clinical Point of View in the Year 2021. *Journal of Clinical Medicine*. 10(6): 1–10.
- Boye, K. S., Lage, M. J., Shinde, S., Thieu, V., & Bae, J. P. 2021. Trends in HbA1c and Body Mass Index Among Individuals with Type 2 Diabetes: Evidence from a US Database 2012-2019. *Diabetes Therapy : Research, Treatment and*

- Education of Diabetes and Related Disorders*. 12(7): 2077–2087.
- Boye, K. S., Thieu, V. T., Lage, M. J., Miller, H., & Paczkowski, R. 2022. The Association Between Sustained HbA1c Control and Long-Term Complications Among Individuals with Type 2 Diabetes: A Retrospective Study. *Advances in Therapy*. 39(5): 2208–2221.
- Brilianti, P. 2022. Hubungan Neutrofil Limfosit Rasio (NLR) dan Nilai Hba1c pada Pasien Diabetes Melitus. In *Skripsi*. Jakarta: Universitas Nasional.
- Buonacera, A., Stancanelli, B., Colaci, M., & Malatino, L. 2022. Neutrophil to Lymphocyte Ratio: An Emerging Marker of the Relationships between the Immune System and Diseases. *International Journal of Molecular Sciences*. 23(7): 1-10.
- Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S. *et al*. 2020. Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing*. 25(8): 652–661.
- Canova, S., Cortinovis, D. L., & Ambrogi, F. 2018. How to describe univariate data. *Journal of thoracic disease*. 9(6): 1741–1743.
- Cauwenberghs, N., Sabovčik, F., Vandenabeele, E., Kobayashi, Y., Haddad, F., Budts, W. *et al*. 2021. Subclinical Heart Dysfunction in Relation to Metabolic and Inflammatory Markers: A Community-Based Study. *American Journal of Hypertension*. 34(1): 46–55.
- Chandrasekaran, P., & Weiskirchen, R. 2024. The Role of Obesity in Type 2 Diabetes Mellitus—An Overview. *International Journal of Molecular Sciences*. 25(3): 1–10).
- d’Emden, M. C., Shaw, J. E., Jones, G. R., & Cheung, N. W. 2015. Guidance concerning the use of glycated haemoglobin (HbA1c) for the diagnosis of diabetes mellitus. *The Medical Journal of Australia*. 203(2): 89–90.
- Dahlan, S. M. 2019. *Statistik Untuk Kedokteran Dan Kesehatan*. Jakarta: Epidemiologi Indonesia.
- Das, U., & Kar, N. 2023. Prevalence and risk factor of diabetes among the elderly people in West Bengal: evidence-based LASI 1st wave. *BMC Endocrine Disorders*. 23(1): 170.
- Duman, T. T., Aktas, G., Atak, B. M., Kocak, M. Z., Erkus, E., & Savli, H. 2019.

- Neutrophil to lymphocyte ratio as an indicative of diabetic control level in type 2 diabetes mellitus. *African Health Sciences*. 19(1): 1602–1606.
- Fadini, G. P., Bonora, B. M., & Avogaro, A. 2017. SGLT2 inhibitors and diabetic ketoacidosis: data from the FDA Adverse Event Reporting System. *Diabetologia*. 60(8): 1385–1389.
- Farooqi, A., Gillies, C., Sathanapally, H., Abner, S., Seidu, S., Davies, M. J. *et al.* 2022. A Systematic Review and Meta-Analysis to Compare the Prevalence of Depression between People with and without Type 1 and Type 2 Diabetes. *Primary Care Diabetes*. 1(1): 1–10.
- Goyal, R., Singhal, M., & Jialal, I. 2023. Type 2 Diabetes. In *StatPearls [Internet]*. Treasure Island (FL): StatPearls Publishing.
- Gurmu, M. Z., Genet, S., Gizaw, S. T., Feyisa, T. O., & Gnanasekaran, N. 2022. Neutrophil-lymphocyte ratio as an inflammatory biomarker of diabetic nephropathy among type 2 diabetes mellitus patients: A comparative cross-sectional study. *SAGE Open Medicine*. 10(1): 1–10.
- Hare, M. J. L., Shaw, J. E., & Zimmet, P. Z. 2012. Current controversies in the use of haemoglobin A1c. *Journal of Internal Medicine*. 271(3): 227–236.
- Hirano, T. 2018. Pathophysiology of Diabetic Dyslipidemia. *Journal of Atherosclerosis and Thrombosis*. 25(9): 771–782.
- Hussain, M., Babar, M. Z. M., Akhtar, L., & Hussain, M. S. 2017. Neutrophil lymphocyte ratio (NLR): A well assessment tool of glycemic control in type 2 diabetic patients. *Pakistan Journal of Medical Sciences*. 33(6): 1366–1370.
- Hussain, S., & Chowdhury, T. A. 2019. The Impact of Comorbidities on the Pharmacological Management of Type 2 Diabetes Mellitus. *Drugs*. 79(3): 231–242.
- Jia, G., & Sowers, J. R. 2021. Hypertension in Diabetes: An Update of Basic Mechanisms and Clinical Disease. *Hypertension*. 78(5): 1197–1205.
- Kaiafa, G., Veneti, S., Polychronopoulos, G., Pilalas, D., Daios, S., Kanellos, I. *et al.* 2021. Is HbA1c an ideal biomarker of well-controlled diabetes? *Postgraduate Medical Journal*. 97(1148): 380–383.
- Karakonstantis, S., Kalemaki, D., Tzagkarakis, E., & Lydakias, C. 2018. Pitfalls in studies of eosinopenia and neutrophil-to-lymphocyte count ratio. *Infectious*

- Diseases (London, England)*. 50(3): 163–174.
- Kautzky-Willer, A., Leutner, M., & Harreiter, J. 2023. Sex differences in type 2 diabetes. *Diabetologia*. 66(6): 986–1002.
- Kenny, H. C., & Abel, E. D. 2019. Heart Failure in Type 2 Diabetes Mellitus. *Circulation Research*. 124(1): 121–141.
- Lau, L.-H., Lew, J., Borschmann, K., Thijs, V., & Ekinici, E. I. 2019. Prevalence of diabetes and its effects on stroke outcomes: A meta-analysis and literature review. *Journal of Diabetes Investigation*. 10(3): 780–792.
- Lee, Y., & Siddiqui, W. J. 2020. Cholesterol Levels. *StatPearls [Internet]*. *Treasure Island (FL): StatPearls Publishing*.
- Ley, S. H., Schulze, M. B., Hivert, M.-F., Meigs, J. B., & Hu, F. B. 2018. Risk Factors for Type 2 Diabetes. In *Cowie CC, Casagrande SS, Menke A, et al., editors. Diabetes in America 3rd edition*. Bethesda (MD): National Institute of Diabetes and Digestive and Kidney Diseases.
- Lowsby, R., Gomes, C., Jarman, I., Lisboa, P., Nee, P. A., Vardhan, M. *et al.* 2015. Neutrophil to lymphocyte count ratio as an early indicator of blood stream infection in the emergency department. *Emergency Medicine Journal*. 32(7): 531–534.
- Mahajan, M., Prasad, M. K., Ashok, C., Guria, R. T., Marandi, S., Vidyapati *et al.* 2023. The Correlation of the Neutrophil-to-Lymphocyte Ratio With Microvascular Complications in Patients With Diabetes Mellitus. *Cureus*. 15(9): e44601.
- Maida, C. D., Daidone, M., Pacinella, G., Norrito, R. L., Pinto, A., & Tuttolomondo, A. 2022. Diabetes and Ischemic Stroke: An Old and New Relationship an Overview of the Close Interaction between These Diseases. *International Journal of Molecular Sciences*. 23(4): 1–10.
- Mamo, Y., Bekele, F., Nigussie, T., & Zewudie, A. 2019. Determinants of poor glycemic control among adult patients with type 2 diabetes mellitus in Jimma University Medical Center, Jimma zone, south west Ethiopia: a case control study. *BMC Endocrine Disorders*. 19(1): 91.
- Matuschik, L., Riabov, V., Schmuttermaier, C., Sevastyanova, T., Weiss, C.,

- Klüter, H. *et al.* 2022. Hyperglycemia Induces Inflammatory Response of Human Macrophages to CD163-Mediated Scavenging of Hemoglobin-Haptoglobin Complexes. *International Journal of Molecular Sciences*. 23(3): 1–10).
- Menon, G., Johnson, S. E., Hegde, A., Rathod, S., Nayak, R., & Nair, R. 2021. Neutrophil to lymphocyte ratio - A novel prognostic marker following spontaneous intracerebral haemorrhage. *Clinical Neurology and Neurosurgery*. 200(1): 106339.
- Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. 2019. Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*. 22(1): 67–72.
- Moganti, K., Li, F., Schmuttermaier, C., Riemann, S., Klüter, H., Gratchev, A. *et al.* 2017. Hyperglycemia induces mixed M1/M2 cytokine profile in primary human monocyte-derived macrophages. *Immunobiology*. 222(10): 952–959.
- Mosenzon, O., Cheng, A. Y., Rabinstein, A. A., & Sacco, S. 2023. Diabetes and Stroke: What Are the Connections? *Journal of Stroke*. 25(1): 26–38.
- Musa, E., El-Bashir, J. M., Sani-Bello, F., & Bakari, A. G. 2021. Clinical and biochemical correlates of hypogonadism in men with type 2 diabetes mellitus. *The Pan African Medical Journal*. 38(1): 292.
- Nakanga, W. P., Crampin, A., & Nyirenda, M. 2018. Should haemoglobin A1C be used for diagnosis of diabetes mellitus in Malawi? *Malawi Medical Journal : The Journal of Medical Association of Malawi*. 28(1): 28–30.
- Natalia, Y., Silva, G. D., & Djatmiko, W. 2023. Hubungan antara Rasio Neutrofil Limfosit dengan Derajat Keparahan COVID-19 pada Pasien di RSUD Prof. Dr. Margono Soekarjo. *Jurnal Universitas Sriwijaya*. 1(1): 1–10.
- Nurahmi, N., Mulyono, B., & Windarwati, W. 2021. The Relationship of Neutrophil-Lymphocyte Ratio and Glycemic Control in Type 2 Diabetes Mellitus Patients. *Indonesian Journal of Clinical Pathology and Medical Laboratory*. 28(1): 14–16.
- Oktora, S. I., & Butar, D. B. 2022. Determinants of Diabetes Mellitus Prevalence in Indonesia. *Jurnal Kemas*. 18(2): 266–273.
- Ozisik, H., Ozgen, G., Cetinkalp, S., Saygili, F., Suner, A., & Erdogan, M. 2022.

- The relationship between neutrophil lymphocyte ratio and diabetes control in patients with type 2 diabetes mellitus. *Ege Journal of Medicine*. 61(3): 444–451.
- Perkumpulan Endokrinologi Indonesia. 2021. *Pedoman Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 di Indonesia*. Jakarta: PERKENI.
- Pollack, R. M., Donath, M. Y., LeRoith, D., & Leibowitz, G. 2016. Anti-inflammatory Agents in the Treatment of Diabetes and Its Vascular Complications. *Diabetes Care*. 39(2): S244–S252.
- Rodríguez-Rodríguez, E., López-Sobaler, A. M., Ortega, R. M., Delgado-Losada, M. L., López-Parra, A. M., & Aparicio, A. 2020. Association between Neutrophil-to-Lymphocyte Ratio with Abdominal Obesity and Healthy Eating Index in a Representative Older Spanish Population. *Nutrients*. 12(3): 1–10.
- Sapra, A., & Bhandari, P. 2023. Diabetes. In *StatPearls [Internet]*. Treasure Island (FL): StatPearls Publishing.
- Sarnings, W., Aman, A. M., Rasyid, H., Bakri, S., Sanusi, H., As Daud, N. *et al.* 2022. Obesity Measurement Index Is Associated With Hemoglobin A1c Level in Young Adult Without Diabetes: A Single-Center Cross-Sectional Study. *Journal of Endocrinology and Metabolism*. 12(4):1- 5.
- Sastroasmoro, S. 2014. *Dasar-Dasar Metodologi Penelitian Klinis*. Jakarta: Sagung Seto.
- Schober, P., Boer, C., & Schwarte, L. A. 2018. Correlation Coefficients: Appropriate Use and Interpretation. *Anesthesia and Analgesia*. 126(5): 1763–1768.
- Serdar, M. A., Serteser, M., Ucal, Y., Karpuzoglu, H. F., Aksungar, F. B., Coskun, A. *et al.* 2020. An Assessment of HbA1c in Diabetes Mellitus and Pre-diabetes Diagnosis: a Multi-centered Data Mining Study. *Applied Biochemistry and Biotechnology*. 190(1): 44–56.
- Shimobayashi, M., Albert, V., Woelnerhanssen, B., Frei, I. C., Weissenberger, D., Meyer-Gerspach, A. C. *et al.* 2018. Insulin resistance causes inflammation in adipose tissue. *The Journal of Clinical Investigation*. 128(4): 1538–1550.
- Skogberg, N., Laatikainen, T., Lilja, E., Lundqvist, A., Härkänen, T., & Koponen, P. 2019. The association between anthropometric measures and glycosylated

- haemoglobin (HbA1c) is different in Russian, Somali and Kurdish origin migrants compared with the general population in Finland: a cross-sectional population-based study. *BMC Public Health*. 19(1): 391.
- Sun, Y., Zhu, Y., Zhang, L., Lu, Y., Liu, Y., Zhang, Y. *et al.* 2021. Relationship between Insulin Secretion and Arterial Stiffness in Essential Hypertension. *International Journal of Hypertension*. 21(1): 1–10.
- Tanoey, J., & Becher, H. 2021. Diabetes prevalence and risk factors of early-onset adult diabetes: results from the Indonesian family life survey. *Global Health Action*. 14(1): 2001144.
- Ulandari, R., Kurniawan, L. B., Nurahmi, & Muhadi, D. 2023. Analysis of NLR in Type 2 Diabetes Mellitus with and without Diabetic Foot Ulcer. *Indonesian Journal of Clinical Pathology and Medical Laboratory*. 29(2): 185–188.
- Umarani, M. K., Sahi, K., & Bharathi, M. 2020. Study of Neutrophil-Lymphocyte ratio (NLR) in diabetes mellitus. *Tropical Journal of Pathology and Microbiology*. 6(1): 298–302.
- van Beers, C. A. J., Caris, M. G., DeVries, J. H., & Serné, E. H. 2018. The relation between HbA1c and hypoglycemia revisited; a secondary analysis from an intervention trial in patients with type 1 diabetes and impaired awareness of hypoglycemia. *Journal of Diabetes and Its Complications*. 32(1): 100–103.
- Vecoli, C., Basta, G., Borghini, A., Gaggini, M., Del Turco, S., Mercuri, A. *et al.* 2022. Advanced glycation end products, leukocyte telomere length, and mitochondrial DNA copy number in patients with coronary artery disease and alterations of glucose homeostasis: From the GENOCOR study. *Nutrition, Metabolism, and Cardiovascular Diseases*. 32(5): 1236–1244.
- Wang, X., & Ji, X. 2020. Sample Size Estimation in Clinical Research: From Randomized Controlled Trials to Observational Studies. *Chest*. 158(1): S12–S20.
- Wu, T.-E., Su, Y.W., & Chen, H.S. 2022. Mean HbA1c and HbA1c variability are associated with differing diabetes-related complications in patients with type 2 diabetes mellitus. *Diabetes Research and Clinical Practice*. 192(1): 1–10.
- Yan, Z., Cai, M., Han, X., Chen, Q., & Lu, H. 2023. The Interaction Between Age and Risk Factors for Diabetes and Prediabetes: A Community-Based Cross-

Sectional Study. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*. 16(1): 85–93.

Yang, J., & Liu, Z. 2022. Mechanistic Pathogenesis of Endothelial Dysfunction in Diabetic Nephropathy and Retinopathy. *Frontiers in Endocrinology*. 13(1): 816400.

Yilmaz, H., Ucan, B., Sayki, M., Unsal, I., Sahin, M., Ozbek, M. *et al.* 2015. Usefulness of the neutrophil-to-lymphocyte ratio to prediction of type 2 diabetes mellitus in morbid obesity. *Diabetes & Metabolic Syndrome*. 9(4): 299–304.

Zahorec, R. 2021. Neutrophil-to-lymphocyte ratio, past, present and future perspectives. *Bratislavske Lekarske Listy*. 122(7): 474–488.

Zhang, R., Pan, Y., Ren, Y. K., Sun, Q. B., Fu, T. T., Zhao, X. *et al.* 2024. Mediating Effect of the NLR on the Relationship Between HbA1c and Left Atrial Stiffness in Overweight Patients With Hypertension. *American Journal of Hypertension*. 4(1): 597–603.

