

DAFTAR PUSTAKA

- Andersson, C, van Gaal, L, Caterson, ID. 2012. Relationship between HbA1c levels and risk of cardiovascular adverse outcomes and all-cause mortality in overweight and obese cardiovascular high-risk women and men with type 2 diabetes. *Diabetologia* 55: 2348–2355.
- American Diabetes Association. 2015. Diagnosis and classification of diabetes mellitus. *American Diabetes Care*, Vol.38, pp: 8-16.
- Arruda OAM, Reeder GS, Bell MR, *et al.* 2009. Neutrophilia predicts death and heart failure after myocardial infarction: A community-based study. *Circ Cardiovasc Qual Outcomes* 2:656–662.
- Azab B, Zaher M, Weiserbs KF. 2010. Usefulness of neutrophil to lymphocyte ratio in predicting short- and long-term mortality after non-ST-elevation myocardial infarction. *Am J Cardiol* 106: 470–476.
- Chang FY, Shaio MF. 1995. Decreased cell-mediated immunity in patients with non-insulin-dependent diabetes mellitus. *Diabetes Res Clin Pract* 28: 137–146.
- Chung K-P, Chang H-T, Lo S-C, Chang L-Y, Lin S-Y, Cheng A, *et al.* 2015. Severe lymphopenia is associated with elevated plasma interleukin-15 levels and increased mortality during severe sepsis. *Shock* 43(6):569–575.
- Danaei, G, Lawes, CM, Vander Hoorn, S. 2006. Global and regional mortality from ischaemic heart disease and stroke attributable to higher-than-optimum blood glucose concentration: comparative risk assessment. *Lancet* 368: 1651–1659.
- Demirtas L, Degirmenci H, Akbas EM, *et al.* 2015. Association of hematological indices with diabetes, impaired glucose regulation and microvascular complications of diabetes. *Int J Clin Exp Med* 8(7):11420–11427.
- Departemen Kesehatan. 2009.
[Http://www.pppl.depkes.go.id/index.php?c=berita&m=fullview&id=374](http://www.pppl.depkes.go.id/index.php?c=berita&m=fullview&id=374).
2021;30 November.
- Duman TT, Aktas G, Atak BM, Kocak MZ, Erkus E, Savli H. 2019. Neutrophil to lymphocyte ratio as an indicative of diabetic control level in type 2 diabetes mellitus. *Afr Health Sci. Mar* 19(1):1602-1606.
- Eyth Emily E, Naik Roopa. 2021. Hemoglobin A1C. *StatPearls*
- Gao SQ, Huang LD, Dai RJ. *et al.* 2015. Neutrophillymphocyte ratio: a controversial marker in predicting Crohn's disease severity. *Int J Clin Exp Pathol* 8:14779-85.

- Horne BD, Anderson JL, John JM, *et al.* 2005. Which white blood cell subtypes predict increased cardiovascular risk? *J Am Coll Cardiol* 45(10):1638–1643.
- Hussain M, Babar MZM, Akhtar L, *et al.* 2017. Neutrophil lymphocyte ratio (NLR): A well assessment tool of glycemic control in Type-2 diabetic patients. *Pak J Med Sci* 33(6):1366-1370.
- Imtiaz F, Shafique K, Mirza SS. 2012. Neutrophil lymphocyte ratio as a measure of systemic inflammation in prevalent chronic diseases in Asian population. *Int Arch Med* 5: 2–2.
- International Diabetes Federation. 2017. *IDF diabetes atlas*.
- Josh Farkas. 2019. Neutrophil-Lymphocyte Ratio (NLR): Free upgrade to your WBC. PLUMCrit
- Kemenkes RI, 2018. Riset Kesehatan dasar 2018. *Jakarta*
- Khodabandehlou T, Zhao H, Vimeux M. 1998. Haemorheological consequences of hyperglycaemic spike in healthy volunteers and insulin-dependent diabetics. *Clin Hemorheol Microcirc* 19: 105–114.
- Lou M, Luo P, Tang R, Peng Y, *et al.* 2015. Relationship between neutrophil-lymphocyte ratio and insulin resistance in newly diagnosed type 2 diabetes mellitus patients. *BMC Endocr Disord* 15(1):9.
- Lyons TJ, Basu A. 2012. Biomarkers in diabetes:hemoglobin A1c, vascular and tissue markers. *Translational Res* 159(4):303–312.
- Madjid M, Fatemi O. 2013. Components of the complete blood count as risk predictor for coronary heart disease:a review. *Tex Heart I J* 40(1):17–29.
- Moursy EY, Megallaa MH, Mouftah RF, *et al.* 2015. Relationship between neutrophil-lymphocyte ratio and microvascular complications in Egyptian patients with type 2 diabetes. *Am J Intern Med* 3(6):250–5.
- Ohshita K, Yamane K, Hanafusa M. 2004. Elevated white blood cell count in subjects with impaired glucose tolerance. *Diabetes Care* 27: 491–496.
- Roy B. 2013. Biomolecular basis of the role of diabetes mellitus in osteoporosis and bone fractures. *World J Diabetes* 4(4): 101-113.
- Saito, Y, Takahashi, I, Iwane, K. 2013. The influence of blood glucose on neutrophil function in individuals without diabetes. *Luminescence* 28: 569–573.
- Selfil F, Ulutas KT, Dokuyucu R, *et al.* 2014. Investigation of neutrophil lymphocyte ratio and blood glucose regulation in patients with type 2 diabetes mellitus. *J*

- Int Med Res* 42(2):581–588.
- Sylvia M, Lorraine. 2015. Patofisiologi Edisi 6 Vol 2 Konsep Klinis Proses- Proses Penyakit. *Jakarta*: EGC.
- Tamhane UU, Aneja S, Montgomery D, *et al.* 2008. Association between admission neutrophil to lymphocyte ratio and outcomes in patients with acute coronary syndrome. *Am J Cardiol* 102:653–657.
- Tong PC, Lee KF, So WY. 2004. White blood cell count is associated with macro- and microvascular complications in Chinese patients with type 2 diabetes. *Diabetes Care* 27: 216–222.
- Tsai JC, Sheu SH, Chiu HC. 2007. Association of peripheral total and differential leukocyte counts with metabolic syndrome and risk of ischemic cardiovascular diseases in patients with type 2 diabetes mellitus. *Diabetes Metab Res Rev* 23: 111–118.
- Wang Q, Zhang B, Xu Y, *et al.* 2013. The Relationship between serum osteocalcin concentration and glucose metabolism in patients with type 2 diabetes mellitus. *J Endocrinology* 2:1-7.
- WHO. 2021. Diabetes. <https://www.who.int/news-room/fact-sheets/detail/diabetes>. 2021; 01 Desember.
- 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.
- Zazula AD, Précoma-Neto D, Gomes AM, *et al.* 2008. An assessment of neutrophils/lymphocytes ratio in patients suspected of acute coronary syndrome. *Arq Bras Cardiol* 90:31–36.

Lampiran I Tabel Lampiran

Tabel Lampiran 1. Data subjek penelitian

No	ID Pasien	Jenis Kelamin	HbA1c	NLR
1	Pasien 1	L	6,88	1,37
2	Pasien 2	P	6,5	2,02
3	Pasien 3	L	5	2,39
4	Pasien 4	L	5,6	2,36
5	Pasien 5	L	4	1,32
6	Pasien 6	P	4,1	1,88
7	Pasien 7	L	6,9	1,61
8	Pasien 8	P	4,3	2,53
9	Pasien 9	L	6	2,56
10	Pasien 10	P	5,2	2,92
11	Pasien 11	P	6,9	2,31
12	Pasien 12	L	6,1	1,1
13	Pasien 13	L	5,2	4,07
14	Pasien 14	P	4,2	3,9
15	Pasien 15	P	6,7	1,96
16	Pasien 16	P	3,6	1,76
17	Pasien 17	P	6,1	4,12
18	Pasien 18	L	4,5	2,09
19	Pasien 19	L	4	2,24
20	Pasien 20	P	6,4	1,47
21	Pasien 21	L	4	2,29
22	Pasien 22	P	5	2,64
23	Pasien 23	L	5	0,92
24	Pasien 24	P	5,4	2,06
25	Pasien 25	L	6,6	3,23
26	Pasien 26	P	6,5	2,12
27	Pasien 27	P	4,1	1,39
28	Pasien 28	P	13,2	6,86
29	Pasien 29	P	12,6	2,55
30	Pasien 30	P	7,8	5,12
31	Pasien 31	L	8,9	1,83
32	Pasien 32	P	7,4	1,94
33	Pasien 33	L	8,2	2,02
34	Pasien 34	L	7,9	2,59
35	Pasien 35	P	10,2	2,2
36	Pasien 36	P	9,3	1,9
37	Pasien 37	P	11,6	2,52
38	Pasien 38	L	11,6	5,96

39	Pasien 39	P	12,8	5,91
40	Pasien 40	P	9,5	1,89
41	Pasien 41	L	8,5	3,67
42	Pasien 42	P	10	5,52
43	Pasien 43	L	10,4	5,54
44	Pasien 44	P	8	1,82
45	Pasien 45	L	13	2,25
46	Pasien 46	P	11,6	6,07
47	Pasien 47	L	9,3	3,34
48	Pasien 48	L	12,7	8,61
49	Pasien 49	L	7,4	3,19
50	Pasien 50	L	8,7	7,64
51	Pasien 51	P	7	3,45
52	Pasien 52	P	10	4,02
53	Pasien 53	L	12,7	2,59
54	Pasien 54	L	11,9	5,71

Tabel Lampiran 2. Hasil uji independent sample t-test

Grub Statistik				
Kelompok DM	N	Rata-rata	SD	SE
NLR DM terkendali	27	2,25	1,55	0,298
NLR DM tidak terkendali	27	3,95	2,02	0,388

Independent Sampel Test					
	t	df	significance one-sided p	significance two-sided p	SE
NLR	2,860	52	0,003	0,006	0,489

Significance $P < 0,05$

Tabel Lampiran 3. Hasil uji regresi linier

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	0,384 (a)	0,147	0,113	1,899

a. Predictor: (constant), HbA1c

ANOVA (a)					
Model	Sum of square	df	Mean Square	F	Sig.
Regression	15,588	1	15,588	4,319	0,048 (b)
Residual	90,229	25	3,609		
Total	105,817	26			

a. Predictor: (constant), HbA1c, b. Dependent variable: NLR

Model	Coefficient (a)		Standartdized Coefficients Beta	t	Sig.
	Unstandaridized B	Coefficients Std.Error			
(Constant)	0,070	1,903		0,037	0,971
HbA1c	0,385	0,185	0,384	2,078	0,048

a.Predictor: (constant), HbA1c

Gambar Lampiran 1. Proses pengerjaan sampel

