

**DAFTAR PUSTAKA**

1. Saeedi, P. et al. 2019. Global and regional diabetes prevalence estimates for 2019 and projections for 2030 and 2045: Results from the International Diabetes Federation Diabetes Atlas, 9th edition. Elsevier Ireland Ltd. 2019;157:107843.
2. Riskesdas. Hasil Utama Riset Kesehatan Dasar (RISKESDAS). 2016;44(8):1–200.
3. Khan, Y., M. Khan, M. and Raza Farooqui, M. Diabetic foot ulcers: a review of current management. *International Journal of Research in Medical Sciences*. 2017;5(11):4683.
4. Zubair, M. Diabetic Foot Ulcer: A Review. *American Journal of Internal Medicine*. 2015;3(2):28.
5. Bader, M. S. Diabetic foot infection. *American Family Physician*. 2008;78(1).
6. Guarner, J., Dolan, H. K. and Cole, L. Erythrocyte sedimentation rate: Journey verifying a new method for an imperfect test. *American Journal of Clinical Pathology*. 2015;144(4):536–538.
7. Sproston, N. R. and Ashworth, J. J. Role of C-reactive protein at sites of inflammation and infection. *Frontiers in Immunology*. 2018;9:1–11.
8. Hadavand, F., Amouzegar, A., Amid, H. Pro-Calcitonin, Erythrocyte Sedimentation Rate and C - reactive Protein in Predicting Diabetic Foot Ulcer Characteristics; a Cross Sectional Study. *Academic Emergency Medicine*. 2019;7(1):1-6.
9. Fleischer AE, Didyk AA, Woods JB, et al. Combined clinical and laboratory testing improves diagnostic accuracy for osteomyelitis in the diabetic foot. *Journal of Foot and Ankle Surgeon*. 2009;48:39–46.
10. Butalia S, Palda VA, Sargeant RJ, et al. Does this patient with diabetes have osteomyelitis of the lower extremity? *JAMA*. 2008;299:806–13.
11. Alexiadou, K., & Doupis, J. Management of diabetic foot ulcers. *Diabetes therapy : research, treatment and education of diabetes and related disorders*. 2012;3(1):4.
12. Amin, N., & Doupis, J. Diabetic foot disease: From the evaluation of the "foot

- at risk" to the novel diabetic ulcer treatment modalities. *World journal of diabetes*. 2016;7(7):153–164.
13. Pengzi Z, Jing L, Yali J, Sunyinyan T, Dalong Z, Yan B. 2017. Global Epidemiology of Diabetic Foot Ulceration: a systematic review and meta-analysis. *Annals of Medicine*. 2017;49(2):106-16.
  14. Chiwanga F, Njelekela M. 2015. Diabetic foot: prevalence, knowledge, and foot self-care practices among diabetic patients in Dar es Salaam, Tanzania – a cross sectional study. *Journal of Foot and Ankle Research* 2015;8(20):1-7.
  15. Rina, Setyawan H, Nugroho H, Hadisaputro S, Pemayun T. Faktor-Faktor Risiko Kejadian Kaki Diabetik pada Penderita Diabetes Mellitus Tipe 2 (Studi Kasus di RSUP dr. M. Djamil Padang). *Jurnal Epidemiologi Kesehatan Komunitas*, 1(2):48-60.
  16. Giurato L, Meloni M, Izzo V, Uccioli L. Osteomyelitis in diabetic foot: A comprehensive overview. *World Journal of Diabetes*. 2017;8(4):135-42.
  17. Faglia E, Clerici G, Caminiti M, Curci V, Somalvico F. Influence of Osteomyelitis Location Foot of Diabetic Patients with Transtibial Amputation. *Foot and Ankle International*. 2013;34(2):222-27.
  18. Aragón-Sánchez J, Lázaro-Martínez JL, Hernández-Herrero C, Campillo-Vilorio N, Quintana-Marrero Y, García-Morales E, Hernández-Herrero MJ. Does osteomyelitis in the feet of patients with diabetes really recur after surgical treatment? Natural history of a surgical series. *Diabetic Medicine*. 2012;29:813-18.
  19. Afsaneh A, Sibbald RG, Mayer D, Goodman L, Botros M, Armstrong DG, Woo K, Boeni T, Ayello E, Kirsner RS. Diabetic Foot Ulcers Part II. Management. *Journal Am Acad Dermatol*. 2014;70(1):21-e1.
  20. Pendsey S. P. Understanding diabetic foot. *International journal of diabetes in developing countries*. 2010;30(2):75–79.
  21. PERKENI. Pedoman Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 Dewasa di Indonesia. PERKENI:Jakarta. 2019
  22. Chastain C, Klopfenstein N, Serezani C, Aronoff D. A Clinical Review of Diabetic Foot Infections. *Clinics in Podiatric Medicine and Surgery*.

- 2019;36(3):381-395.
23. GBD 2015 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet*. 2016;388(10053):1545–602.
  24. Armstrong DG, Boulton AJ, Bus SA. Diabetic foot ulcers and their recurrence. *The New England Journal of Medicine*. 2017;376(24):2367–75.
  25. Armstrong DG, Wrobel J, Robbins JM. Guest Editorial: are diabetes-related wounds and amputations worse than cancer? *International Wound Journal*. 2007;4(4):286–7.
  26. Robbins JM, Strauss G, Aron D, et al. Mortality rates and diabetic foot ulcers: is it time to communicate mortality risk to patients with diabetic foot ulceration? *J Am Podiatr Med Assoc*. 2008;98(6):489–93.
  27. Malone M, Johani K, Jensen SO, et al. Next generation DNA sequencing of tissues from infected diabetic foot ulcers. *EBioMedicine*. 2017;21:142–9.
  28. Hutagalung M, Eljatin D, Sarie V, Sianturi G, Santika G. Diabetic Foot Infection (Infeksi Kaki Diabetik): Diagnosis dan Tatalaksana. *Continuing Medical Education*. 2019;46(6):414-418.
  29. Lavery LA, Armstrong DG, Wunderlich RP, et al. Risk factors for foot infections in individuals with diabetes. *Diabetes Care*. 2006;29(6):1288–93.
  30. Nikoloudi M, Eleftheriadou I, Tentolouris A, et al. Diabetic foot infections: update on management. *Current Infectious Disease Report*. 2018;20(10):40.
  31. Lipsky BA, Berendt AR, Deery HG, et al. Infectious Diseases Society of America. Diagnosis and treatment of diabetic foot infections. *Clin Infect Dis*. 2004;885–910.
  32. Lipsky BA, Berendt AR, Deery HG, et al. Infectious Diseases Society of America. Diagnosis and treatment of diabetic foot infections. *Plast Reconstr Surg*. 2006;117(7 suppl):212S–38S.
  33. Frykberg RG, Cook JJ, Simonson DC. Epidemiology and health care cost of diabetic foot problems. In: Veves A, Giurini JM, Guzman RJ, editors. *The*

- Diabetic Foot. Cham (Switzerland): Humana Press. 2018;3–17.
34. Pence LM, Mock CM, Kays MB, Damer KM, Muloma EW, Erdman SM. Correlation of adherence to the 2012 Infectious Diseases Society of America practice guidelines with patient outcomes in the treatment of diabetic foot infections in an outpatient parenteral antimicrobial programme. *Diabetic Medicine*. 2014;31:1114-20. Doi:10.1111/dme.12501.
  35. Embil JM, Albalawi Z, Boweing K, Trepman E. Foot care: Diabetes Canada clinical practice guidelines expert committee. *Canada Journal Diabetes*. 2018;42:222-7.
  36. Malik A, Mohammad Z, Ahmad J. The diabetic foot infections: Biofilms and antimicrobial resistance. *Diabetes Metabolic Syndrome*. 2013;7:101-7.
  37. Shone A, Burnside J, Chipchase S, Game F, Jeffcoate W. Probing the validity of the probe-to-bone test in the diagnosis of osteomyelitis of the foot in diabetes. *Diabetes Care*. 2006;29:945.
  38. Kalma. Studi Kadar C-Reactive Protein (CRP) pada Penderita Diabetes Melitus Tipe 2. *Jurnal Medika Analisis Kesehatan*. 2018;1(1):62-8.
  39. Jeandrot, A., Richard, J, L., Combescure, C., Jourdan, N., Finge, S, Rodier, M., et al. Serum procalcitonin and C-reactive protein concentrations to distinguish mildly infected from non-infected diabetic foot ulcers: a pilot study. *Diabetologia*. 2008;51:347-52.
  40. Korkmaz, P., Kocak, H., Onbasi, K., Bicici, P., Ozmen, A., Uyar, C., et al. The Role of Serum Procalcitonin, Interleukin-6, and Fibrinogen Levels in Differential Diagnosis of Diabetic Foot Ulcer Infection. *Journal of Diabetes Research*. 2018:1-7.
  41. Lin, Z., Vasudevan, A., Tambyah, P, A. Use of Erythrocyte Sedimentation Rate and C-reactive Protein to Predict Osteomyelitis Recurrence. *Journal of Orthopaedic Surgery*. 2016;24(1):77-83.
  42. Van Asten, S, A, V., Nichlos, A., Fontaine, J, L., Bhavan, K., Peters, E, J, G., Lavery, L, A. The Value of Inflammatory Markers to Diagnose and Monitor Diabetic Foot Osteomyelitis. *International Wound Journal* 2015;14(1):40-5.
  43. Lopic, I., Padoan, A., Bozzato, D., et al. Erythrocyte Sedimentation Rate and

- C-Reactive Protein in Acute Inflammation. *American Journal of Clinical Pathology*. 2019;20:1-16.
44. Rabjohn L, Roberts K, Troiano M, Schoenhaus H. Diagnostic and prognostic value of erythrocyte sedimentation rate in contiguous osteomyelitis of the foot and ankle. *J Foot Ankle Surg* 2007;46:230–7.
  45. Yoon SH, Chung SK, Kim KJ, Kim HJ, Jin YJ, Kim HB. Pyogenic vertebral osteomyelitis: identification of microorganism and laboratory markers used to predict clinical outcome. *Eur Spine J* 2010;19:575–82.
  46. Michail M, Jude E, Liaskos C, Karamagiolis S, Makrilakis K, Dimitroulis D, et al. The performance of serum inflammatory markers for the diagnosis and follow-up of patients with osteomyelitis. *Int J Low Extrem Wounds*. 2013;12(2):94–9.
  47. Ertugrul BM, Savk O, Ozturk B, Cobanoglu M, Oncu S, Sakarya S. The diagnosis of diabetic foot osteomyelitis: examination findings and laboratory values. *Med Sci Monit*. 2009;15:CR307-CR312.
  48. Mutluoğlu M, Uzun G, İpcioğlu OM, et al. Can procalcitonin predict bone infection in people with diabetes with infected foot ulcers? A pilot study. *Diabetes Res Clin Pract*. 2011;94:53-56.
  49. Chen, X., Shen, Y., Wang, Y., Li, Y., Guo, S., Liang, Y., Que, H. Decreased accuracy of erythrocyte sedimentation rate in diagnosing osteomyelitis in diabetic foot infection patients with severe renal impairment: A retrospective cross-sectional study. *PloS one*. 2022; 17(3): e0265769.
  50. Van Asten, S. A., Nichols, A., La Fontaine, J., Bhavan, K., Peters, E. J., & Lavery, L. A. The value of inflammatory markers to diagnose and monitor diabetic foot osteomyelitis. *International wound journal*. 2017; 14(1): 40-45.
  51. Soleimani, Z., Amighi, F., Vakili, Z., Momen-Heravi, M., & Moravveji, S. A. Diagnostic value of procalcitonin, erythrocyte sedimentation rate (ESR), quantitative C-reactive protein (CRP) and clinical findings associated with osteomyelitis in patients with diabetic foot. *Human antibodies*, 2021; 1-7.
  52. Moallemi, S. K., Niroomand, M., Tadayon, N., Forouzanfar, M. M., & Fatemi, A. Diagnostic Value of Erythrocyte Sedimentation Rate and C

- Reactive Protein in detecting Diabetic Foot Osteomyelitis; a Cross-sectional Study. *Archives of Academic Emergency Medicine*. 2021; 8(1).
53. Jonaidi Jafari N, Safaee Firouzabadi M, Izadi M, Safaee Firouzabadi MS, Saburi A. Can procalcitonin be an accurate diagnostic marker for the classification of diabetic foot ulcers? *Int J Endocrinol Metab*. 2014; 12(1):e13376. <https://doi.org/10.5812/ijem.13376> PMID: 24696696
54. Umapathy D, Dornadula S, Rajagopalan A, Murthy N, Mariappanadar V, Kesavan R, et al. Potential of circulatory procalcitonin as a biomarker reflecting inflammation among South Indian diabetic foot ulcers. *J Vasc Surg*. 2018; 67(4):1283–1291. <https://doi.org/10.1016/j.jvs.2017.02.060> PMID: 28736121
55. El-Kafrawy NA, Shaaban MA, Korany MA, Sonbol AA, Ata MB. Procalcitonin as a marker of diabetic foot ulcer infection. *Egypt J Intern Med*. 2019; 31(4):652–657. [https://doi.org/10.4103/ejim.ejim\\_29\\_19](https://doi.org/10.4103/ejim.ejim_29_19)
56. Zakariah NA, Bajuri MY, Hassan R, Ismail Z, Mansor MM, Othman H, et al. Is procalcitonin more superior to hs-CRP in the diagnosis of infection in diabetic foot ulcer? *Malays J Pathol*. 2020; 42(1):77–84. PMID: 32342934
57. Todorova AS, Dimova RB, Chakarova NY, Serdarova MS, Grozeva GG, Georgiev GK, et al. Comparative evaluation of the diagnostic value of procalcitonin and hsCRP for the presence of mild-to-moderate diabetic foot infections. *Int J Low Extrem Wounds*. 2021. Available from: <https://journals.sagepub.com/doi/abs/10.1177/15347346211011849> PMID: 33909506
58. Al-Shammaree SAW, Abu-Alkaseem BA, Salman IN. Procalcitonin levels and other biochemical parameters in patients with or without diabetic foot complications. *J Res Med Sci*. 2017; 22:5. 95. <https://doi.org/10.4103/1735-1995.199090> PMID: 28400827
59. Sharma, H., Sharma, S., Krishnan, A., Yuan, D., Vangaveti, V. N., Malabu, U. H., & Haleagrahara, N. The efficacy of inflammatory markers in diagnosing infected diabetic foot ulcers and diabetic foot osteomyelitis: Systematic review and meta-analysis. *Plos one*. 2022; 17(4): e0267412.

60. Efat K, Morteza D, Allameh SF, Mehrnaz A, Manoochehr N, Alireza A. Diagnostic value of serum procalcitonin level for detecting infected diabetic foot ulcers. *Ann Med Health Sci Res.* 2018; 8(1):79–81.



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN  
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN  
KOMITE ETIK PENELITIAN KESEHATAN  
RSPTN UNIVERSITAS HASANUDDIN

RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR  
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**REKOMENDASI PERSETUJUAN ETIK**

Nomor : 338/UN4.6.4.5.31/ PP36/ 2021

Tanggal: 24 Mei 2021

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

No Protokol	UH20070272	No Sponsor Protokol	
Peneliti Utama	<b>dr. Jancung</b>	Sponsor	
Judul Peneliti	Hubungan Kadar Laju Endap Darah (LED) dan C Reaktif Protein (CRP) Sebagai Nilai Prediktor Dalam Diagnosi Osteomielitis Dengan Infeksi Kaki Pasien Diabetes Mellitus Tipe-2 di RSUP Dr Wahidin Sudirohusodo Makassar		
No Versi Protokol	2	Tanggal Versi	18 Mei 2021
No Versi PSP	2	Tanggal Versi	18 Mei 2021
Tempat Penelitian	<b>RS Dr. Wahidin Sudirohusodo Makassar</b>		
Jenis Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal	Masa Berlaku <b>24 Mei 2021</b> sampai <b>24 Mei 2022</b>	Frekuensi review lanjutan
Ketua Komisi Etik Penelitian Kesehatan FKUH	Nama <b>Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)</b>	Tanda tangan 	
Sekretaris Komisi Etik Penelitian Kesehatan FKUH	Nama <b>dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K)</b>	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





## SURAT KETERANGAN ABSTRAK

Yang bertanda tangan di bawah ini menerangkan bahwa :

Nama : ..... Janaz .....  
No. Pokok : ..... COAS 17 1007 .....  
Program Studi : ..... Ilmu Keperawatan .....  
Judul Tesis/Disertasi : ..... Hubungan kadar (gln endap darah (GSD) dan C-reactive Protein (CRP) sebagai Utkin Pedaktor dalam diagnosis osteoarthritis degenerative pada pasien diabetes mellitus tipe 2 di RSUD DR. Ulinudin Sudiadmadia, Makassar, Indonesia. .....

Menyatakan bahwa naskah abstrak yang disusun oleh mahasiswa tersebut di atas telah diedit dan diterjemahkan di UPT Layanan Bahasa Unhas.

Makassar, ..... 14/08/2022 .....

Mengetahui,  
Kepala Layanan Bahasa,



[Signature]  
Dra. Herawaty, M.Hum., M.A., Ph.D. }  
NIP. 19630103 198803 2 003