

DAFTAR PUSTAKA

- Adiwenanto, A. and Sutejo, B. (2007) *Management of Osteomielitic Chronic Medical Patient at Dr.Kariadi Hospital Semarang in 2001-2005 Periods*.
- Altay, M. *et al.* (2004) 'Squamous cell carcinoma arising in chronic osteomyelitis in foot and ankle.', *Foot & ankle international*, 25(11), pp. 805–9. Available at: <https://doi.org/10.1177/107110070402501109>.
- Azar, F.M., Canale, S.T. and Beaty, J.H. (2020) *Campbell's Operative Orthopaedics, E-Book*. Elsevier Health Sciences.
- Bernard, L. *et al.* (2015) 'Antibiotic treatment for 6 weeks versus 12 weeks in patients with pyogenic vertebral osteomyelitis: an open-label, non-inferiority, randomised, controlled trial.', *Lancet (London, England)*, 385(9971), pp. 875–82. Available at: [https://doi.org/10.1016/S0140-6736\(14\)61233-2](https://doi.org/10.1016/S0140-6736(14)61233-2).
- Birt, M.C. *et al.* (2017) 'Osteomyelitis: Recent advances in pathophysiology and therapeutic strategies.', *Journal of orthopaedics*, 14(1), pp. 45–52. Available at: <https://doi.org/10.1016/j.jor.2016.10.004>.
- Boyce, B.F., Yao, Z. and Xing, L. (2009) 'Osteoclasts have multiple roles in bone in addition to bone resorption.', *Critical reviews in eukaryotic gene expression*, 19(3), pp. 171–80. Available at: <https://doi.org/10.1615/critreveukargeneexpr.v19.i3.10>.
- Brady, R.A. *et al.* (2006) 'Osteomyelitis: Clinical overview and mechanisms of infection persistence', *Clinical Microbiology Newsletter*, 28(9), pp. 65–72. Available at: <https://doi.org/10.1016/j.clinmicnews.2006.04.001>.
- Brady, R A *et al.* (2006) 'Osteomyelitis: clinical overview and mechanisms of infection persistence', *Clinical Microbiology Newsletter*, 28(9), pp. 65–72.

- Castillo, R.C. *et al.* (2005) 'Impact of smoking on fracture healing and risk of complications in limb-threatening open tibia fractures.', *Journal of orthopaedic trauma*, 19(3), pp. 151–7. Available at: <https://doi.org/10.1097/00005131-200503000-00001>.
- Caterson, E.J. *et al.* (2015) 'The medial femoral condyle free osteocutaneous flap for osteomyelitis in pilon fractures.', *Injury*, 46(2), pp. 414–8. Available at: <https://doi.org/10.1016/j.injury.2014.11.008>.
- Chihara, S. and Segreti, J. (2010) 'Osteomyelitis', *Disease-a-Month*, 56(1), pp. 6–31. Available at: <https://doi.org/10.1016/j.disamonth.2009.07.001>.
- Conterno, L.O. and Turchi, M.D. (2013) 'Antibiotics for treating chronic osteomyelitis in adults.', *The Cochrane database of systematic reviews*, (9), p. CD004439. Available at: <https://doi.org/10.1002/14651858.CD004439.pub3>.
- Corradetti, B. *et al.* (2015) 'Osteoprogenitor cells from bone marrow and cortical bone: understanding how the environment affects their fate.', *Stem cells and development*, 24(9), pp. 1112–23. Available at: <https://doi.org/10.1089/scd.2014.0351>.
- Dallas, S.L., Prideaux, M. and Bonewald, L.F. (2013) 'The osteocyte: an endocrine cell ... and more.', *Endocrine reviews*, 34(5), pp. 658–90. Available at: <https://doi.org/10.1210/er.2012-1026>.
- Ferrari, S.L. *et al.* (2018) 'Diagnosis and management of bone fragility in diabetes: an emerging challenge', *Osteoporosis International*, 29(12), pp. 2585–2596. Available at: <https://doi.org/10.1007/s00198-018-4650-2>.
- Forsberg, J.A. *et al.* (2011) 'Diagnosis and management of chronic infection.', *The Journal of the American Academy of Orthopaedic Surgeons*, 19 Suppl 1, pp. S8–S19. Available at: <https://doi.org/10.5435/00124635-201102001-00003>.

- Francis, J.R. *et al.* (2016) 'Chronic Recurrent Multifocal Q Fever Osteomyelitis in Children: An Emerging Clinical Challenge.', *The Pediatric infectious disease journal*, 35(9), pp. 972–6. Available at: <https://doi.org/10.1097/INF.0000000000001211>.
- Fritz, J.M. and McDonald, J.R. (2008) 'Osteomyelitis: approach to diagnosis and treatment.', *The Physician and sportsmedicine*, 36(1), p. nihpa116823. Available at: <https://doi.org/10.3810/psm.2008.12.11>.
- Guillin, O.M. *et al.* (2019) 'Selenium, Selenoproteins and Viral Infection.', *Nutrients*, 11(9). Available at: <https://doi.org/10.3390/nu11092101>.
- Hatzenbuehler, J. and Pulling, T.J. (2011) 'Diagnosis and management of osteomyelitis.', *American family physician*, 84(9), pp. 1027–33.
- Henke, P.K. *et al.* (2005) 'Osteomyelitis of the Foot and Toe in Adults Is a Surgical Disease', *Annals of Surgery*, 241(6), pp. 885–894. Available at: <https://doi.org/10.1097/01.sla.0000164172.28918.3f>.
- Indira SA, Lokarjana L and Pohan DK (2017) *Gambaran Pasien Osteomielitis kronis di Bagian Bedah Orthopaedi RSUP Dr. Hasan Sadikin Bandung Periode Januari 2011 - Desember 2016*. Universitas Jenderal Ahmad Yani. Available at: http://repository.unjani.ac.id/index.php?p=show_detail&id=375 (Accessed: 13 February 2023).
- Irie, S. *et al.* (2019) 'Acute exacerbation of chronic osteomyelitis triggered by aggravation of type 2 diabetes mellitus: A case report', *Journal of Medical Case Reports*, 13(1). Available at: <https://doi.org/10.1186/s13256-018-1954-y>.
- Jiao, H., Xiao, E. and Graves, D.T. (2015) 'Diabetes and Its Effect on Bone and Fracture Healing', *Current Osteoporosis Reports*, 13(5), pp. 327–335. Available at: <https://doi.org/10.1007/s11914-015-0286-8>.

Jorge, L.S., Chueire, A.G. and Rossit, A.R.B. (2010) 'Osteomyelitis: a current challenge.', *The Brazilian journal of infectious diseases : an official publication of the Brazilian Society of Infectious Diseases*, 14(3), pp. 310–5.

Kerr-Valentic, M.A. *et al.* (2009) 'Marjolin's ulcer: modern analysis of an ancient problem.', *Plastic and reconstructive surgery*, 123(1), pp. 184–191. Available at: <https://doi.org/10.1097/PRS.0b013e3181904d86>.

Kremers, H.M. *et al.* (2015) 'Trends in the epidemiology of osteomyelitis: a population-based study, 1969 to 2009.', *The Journal of bone and joint surgery. American volume*, 97(10), pp. 837–45. Available at: <https://doi.org/10.2106/JBJS.N.01350>.

Kumar, V. *et al.* (2014) *Robbins and Cotran pathologic basis of disease, professional edition e-book*. Elsevier health sciences.

Le, B. *et al.* (2017) 'The Components of Bone and What They Can Teach Us about Regeneration', *Materials*, 11(1), p. 14. Available at: <https://doi.org/10.3390/ma11010014>.

Lew, D.P. and Waldvogel, F.A. (2004) 'Osteomyelitis.', *Lancet (London, England)*, 364(9431), pp. 369–79. Available at: [https://doi.org/10.1016/S0140-6736\(04\)16727-5](https://doi.org/10.1016/S0140-6736(04)16727-5).

Ma, X. *et al.* (2018) 'Epidemiology, microbiology and therapeutic consequences of chronic osteomyelitis in northern China: A retrospective analysis of 255 Patients.', *Scientific reports*, 8(1), p. 14895. Available at: <https://doi.org/10.1038/s41598-018-33106-6>.

Macallan, D. (2009) 'Infection and malnutrition', *Medicine*, 37(10), pp. 525–528. Available at: <https://doi.org/10.1016/j.mpmed.2009.07.005>.

Mangialardi, G. *et al.* (2019) 'Bone marrow pericyte dysfunction in individuals with type 2 diabetes', *Diabetologia*, 62(7), pp. 1275–1290. Available at: <https://doi.org/10.1007/s00125-019-4865-6>.

Marais, L.C. and Ferreira, N. (2015) 'Bone transport through an induced membrane in the management of tibial bone defects resulting from chronic osteomyelitis.', *Strategies in*

trauma and limb reconstruction, 10(1), pp. 27–33. Available at: <https://doi.org/10.1007/s11751-015-0221-7>.

Merriman, H. (2014) ‘Infectious Diseases’, in *Acute Care Handbook for Physical Therapists*. Elsevier, pp. 313–334. Available at: <https://doi.org/10.1016/B978-1-4557-2896-1.00013-5>.

Mohamed, A.M. (2008) ‘An overview of bone cells and their regulating factors of differentiation.’, *The Malaysian journal of medical sciences : MJMS*, 15(1), pp. 4–12.

Momodu, I.I. and Savaliya, V. (2022) *Osteomyelitis*.

Mouzopoulos, G. *et al.* (2011) ‘Management of bone infections in adults: the surgeon’s and microbiologist’s perspectives.’, *Injury*, 42 Suppl 5, pp. S18-23. Available at: [https://doi.org/10.1016/S0020-1383\(11\)70128-0](https://doi.org/10.1016/S0020-1383(11)70128-0).

Nugraha, A., Rasyid, H.N. and Sukandar, H. (2021) ‘Profile of Osteomyelitis Patients Visiting the Orthopedic Clinic of Dr. Hasan Sadikin General Hospital, Indonesia, in 2017–2018’, *Althea Medical Journal*, 8(1). Available at: <https://doi.org/10.15850/amj.v8n1.2075>.

Oliver, T.I. and Mutluoglu, M. (2023) *Diabetic Foot Ulcer*.

Pääkkönen, M. *et al.* (2015) ‘Antibiotic Treatment and Surgery for Acute Hematogenous Calcaneal Osteomyelitis of Childhood.’, *The Journal of foot and ankle surgery : official publication of the American College of Foot and Ankle Surgeons*, 54(5), pp. 840–3. Available at: <https://doi.org/10.1053/j.jfas.2015.01.006>.

Panteli, M. *et al.* (2014) ‘Malignant transformation in chronic osteomyelitis: recognition and principles of management.’, *The Journal of the American Academy of Orthopaedic Surgeons*, 22(9), pp. 586–94. Available at: <https://doi.org/10.5435/JAAOS-22-09-586>.

Panteli, M. and Giannoudis, P. V (2016) ‘Chronic osteomyelitis: what the surgeon needs to know.’, *EFORT open reviews*, 1(5), pp. 128–135. Available at: <https://doi.org/10.1302/2058-5241.1.000017>.

- Parsons, B. and Strauss, E. (2004) 'Surgical management of chronic osteomyelitis.', *American journal of surgery*, 188(1A Suppl), pp. 57–66. Available at: [https://doi.org/10.1016/S0002-9610\(03\)00292-7](https://doi.org/10.1016/S0002-9610(03)00292-7).
- Prieto-Pérez, L. *et al.* (2014) 'Osteomyelitis: A descriptive study', *Clinics in Orthopedic Surgery*, 6(1), pp. 20–25. Available at: <https://doi.org/10.4055/cios.2014.6.1.20>.
- Ralston, S.H. (2017) 'Bone structure and metabolism', *Medicine*, 45(9), pp. 560–564. Available at: <https://doi.org/10.1016/j.mpmed.2017.06.008>.
- Riise, Ø.R. *et al.* (2008) 'Childhood osteomyelitis-incidence and differentiation from other acute onset musculoskeletal features in a population-based study', *BMC Pediatrics*, 8(1), p. 45. Available at: <https://doi.org/10.1186/1471-2431-8-45>.
- Rodham, P. *et al.* (2023) 'Long-term outcomes of lower limb post-traumatic osteomyelitis', *European Journal of Trauma and Emergency Surgery*, 49(1), pp. 539–549. Available at: <https://doi.org/10.1007/s00068-022-02104-9>.
- El Sayed, S.A., Nezwek, T.A. and Varacallo, M. (2022) *Physiology, Bone*.
- Schmitt, S.K. (2017) 'Osteomyelitis.', *Infectious disease clinics of North America*, 31(2), pp. 325–338. Available at: <https://doi.org/10.1016/j.idc.2017.01.010>.
- Shemesh, S. *et al.* (2015) 'The value of 18-FDG PET/CT in the diagnosis and management of implant-related infections of the tibia: a case series.', *Injury*, 46(7), pp. 1377–82. Available at: <https://doi.org/10.1016/j.injury.2015.03.002>.
- Sitinjak, A.V.D., Riza, A. and Kurnia, D. (2022) 'Gambaran Kejadian Kasus Osteomielitis Di Bagian Bedah Ortopedi RSUP Dr. M. Djamil Kota Padang Tahun 2018-2020', *Jurnal Ilmu Kesehatan Indonesia*, 3(1), pp. 57–66. Available at: <https://doi.org/10.25077/jikesi.v3i1.728>.

- Slyamova, G. *et al.* (2022) 'Risk Factors for Postoperative Osteomyelitis among Patients after Bone Fracture: A Matched Case–Control Study', *Journal of Clinical Medicine*, 11(20), p. 6072. Available at: <https://doi.org/10.3390/jcm11206072>.
- Solagberu, B. (2004) 'A new classification of osteomyelitis for developing countries', *East African Medical Journal*, 80(7). Available at: <https://doi.org/10.4314/eamj.v80i7.8722>.
- SooHoo, N.F. *et al.* (2009) 'Complication rates following open reduction and internal fixation of ankle fractures.', *The Journal of bone and joint surgery. American volume*, 91(5), pp. 1042–9. Available at: <https://doi.org/10.2106/JBJS.H.00653>.
- Spellberg, B. and Lipsky, B.A. (2012) 'Systemic antibiotic therapy for chronic osteomyelitis in adults.', *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*, 54(3), pp. 393–407. Available at: <https://doi.org/10.1093/cid/cir842>.
- Termaat, M.F. *et al.* (2005) 'The accuracy of diagnostic imaging for the assessment of chronic osteomyelitis: a systematic review and meta-analysis.', *The Journal of bone and joint surgery. American volume*, 87(11), pp. 2464–71. Available at: <https://doi.org/10.2106/JBJS.D.02691>.
- Tong, S.Y.C. *et al.* (2015) 'Staphylococcus aureus infections: epidemiology, pathophysiology, clinical manifestations, and management.', *Clinical microbiology reviews*, 28(3), pp. 603–61. Available at: <https://doi.org/10.1128/CMR.00134-14>.
- Tribble, D.R. *et al.* (2018) 'Osteomyelitis Risk Factors Related to Combat Trauma Open Tibia Fractures: A Case-Control Analysis.', *Journal of orthopaedic trauma*, 32(9), pp. e344–e353. Available at: <https://doi.org/10.1097/BOT.0000000000001225>.
- Walter, G. *et al.* (2012) 'Treatment Algorithms for Chronic Osteomyelitis', *Deutsches Ärzteblatt international* [Preprint]. Available at: <https://doi.org/10.3238/arztebl.2012.0257>.
- Wessels, I., Maywald, M. and Rink, L. (2017) 'Zinc as a Gatekeeper of Immune Function.', *Nutrients*, 9(12). Available at: <https://doi.org/10.3390/nu9121286>.

Wu, H. *et al.* (2019) 'Investigating clinical characteristics and prognostic factors in patients with chronic osteomyelitis of humerus', *Burns & Trauma*, 7. Available at: <https://doi.org/10.1186/s41038-019-0173-0>.

Yanagita, Y. *et al.* (2023) 'Pubic Osteomyelitis in a Young Athlete.', *Cureus*, 15(2), p. e35329. Available at: <https://doi.org/10.7759/cureus.35329>.

Zhang, J. *et al.* (2023) 'Predictors for infection severity for open tibial fractures: major trauma centre perspective', *Archives of Orthopaedic and Trauma Surgery*, 143(11), pp. 6579–6587. Available at: <https://doi.org/10.1007/s00402-023-04956-1>.

LAMPIRAN

Lampiran 1: Biodata Peneliti



Nama Lengkap:	Muhammad Diazulhaj Khasibhasani Ruslan
Tempat, Tanggal Lahir:	Makassar, 22 Februari 2001
Jenis Kelamin:	Laki – laki
Agama:	Islam
Alamat:	Jalan Sunu II No. 12
Fakultas:	Kedokteran
Program Studi:	Pendidikan Dokter
NIM:	C011201108
Nomor Telepon:	085157113994
Alamat <i>e-mail</i> :	Muhammadiyahulhaj@gmail.com
Riwayat Pendidikan:	SD Inpres Baraya I Makassar (2007-2013) SMPN 6 Makassar (2013-2016) SMAN 17 Makassar (2016-2019) S1 Fakultas Kedokteran Unhas (2020-)

Lampiran 2: Data Rekapitulasi Sampel Penelitian

RM	Nama	Tahun	Umur	Jenis Kelamin	Tulang	Riw. Diabetes	Riw. Fraktur
968279	GTP	2022	51	Laki - laki	Metatarsal	Ya	Tidak
956650	AK	2022	18	Laki - laki	Tibia	Tidak	Ya
911812	SS	2021	25	Laki - laki	Tibia	Tidak	Ya
852433	DDH	2022	32	Laki - laki	Tibia	Tidak	Ya
990634	MRA	2022	1	Laki - laki	Tibia	Tidak	Tidak
943754	P	2021	40	Laki - laki	Femur	Ya	Tidak
961136	MRA	2022	17	Laki - laki	Tibia, Fibula	Tidak	Ya
956566	WH	2021	28	Laki - laki	Femur	Tidak	Tidak
995169	HG	2022	14	Laki - laki	Tibia	Tidak	Tidak
993689	R	2022	22	Laki - laki	Tibia	Tidak	Ya
978229	MSDB	2022	37	Laki - laki	Radius, Ulna	Tidak	Ya
957851	PPA	2022	12	Laki - laki	Femur	Tidak	Tidak
986841	FRJ	2022	18	Laki - laki	Femur	Tidak	Ya
292461	PP	2022	22	Laki - laki	Femur	Tidak	Ya
565012	ST	2022	67	Laki - laki	Femur	Tidak	Tidak
977863	VS	2022	24	Perempuan	Femur	Tidak	Ya
975773	S	2022	23	Laki - laki	Femur	Tidak	Tidak
926405	S	2021	40	Laki - laki	Femur	Tidak	Ya
1002336	MZA	2022	4	Laki - laki	Femur	Tidak	Ya
950369	ANFP	2021	7	Perempuan	Femur	Tidak	Tidak
1001722	WS	2022	37	Laki - laki	Humerus	Tidak	Ya
931855	F	2021	12	Laki - laki	Femur	Tidak	Tidak
943308	AK	2022	48	Laki - laki	Tibia	Tidak	Tidak

Lampiran 3: Permohonan Izin Penelitian



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,
RISET, DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN
FAKULTAS KEDOKTERAN
PROGRAM STUDI SARJANA KEDOKTERAN

Jl. Perintis Kemerdekaan Km. 10 Tamalanrea, Makassar 90245, Telp. (0411) 587436, Fax. (0411) 586297

Nomor : 20436/UN4.6.8/PT.01.04/2023
Lamp : ---
Hal : **Permohonan Izin Penelitian**

25 Agustus 2023

Kepada Yth. :
Direktur RSUP Dr. Wahidin Sudirohusodo
Di-
Makassar

Dengan hormat, disampaikan bahwa mahasiswa Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Hasanuddin di bawah ini :

N a m a : Muhammad Diazulhaj Khasibhasani Ruslan
N i m : C011201108

bermaksud melakukan penelitian di RSUP Dr. Wahidin Sudirohusodo dengan judul penelitian **"Karakteristik Pasien Osteomielitis Kronis Di RSUP Dr. Wahidin Sudirohusodo Makassar Periode Januari 2021 - Desember 2022"**

Sehubungan hal tersebut kiranya yang bersangkutan dapat diberi izin untuk melakukan Penelitian dalam rangka penyelesaian studinya.

Demikian permohonan kami, atas bantuan dan kerjasamanya disampaikan terima kasih.



Ketua,
Program Studi Sarjana Kedokteran
Fakultas Kedokteran Unhas

dr. Ririn Nislawati, M.Kes.,Sp.M
NIP 198101182009122003

Tembusan Yth :
1. Arsip

Lampiran 4: Surat Rekomendasi Persetujuan Etik



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
KOMITE ETIK PENELITIAN UNIVERSITAS HASANUDDIN
RSPTN UNIVERSITAS HASANUDDIN



RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR
Sekretariat : Lantai 2 Gedung Laboratorium Terpadu
JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245.
Contact Person: dr. Agussalim Bukhari.,MMed,PhD, SpGK TELP. 081241850858, 0411 5780103, Fax : 0411-581431

REKOMENDASI PERSETUJUAN ETIK

Nomor : 637/UN4.6.4.5.31/ PP36/ 2023

Tanggal: 6 September 2023

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

No Protokol	UH23080655	No Sponsor	
Peneliti Utama	Muhammad Diazulhaj Khasibhasani Ruslan	Sponsor	
Judul Peneliti	Karakteristik Pasien Osteomielitis Kronis Di RSUP Dr. Wahidin Sudirohusodo Makassar Periode Januari 2021 – Desember 2022		
No Versi Protokol	1	Tanggal Versi	2 September 2023
No Versi PSP		Tanggal Versi	
Tempat Penelitian	RSUP Dr. Wahidin Sudirohusodo Makassar		
Jenis Review	☒ Exempted ☐ Expedited ☐ Fullboard Tanggal	Masa Berlaku 6 September 2023 sampai 6 September 2024	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 Lapor 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 prokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan