DAFTAR PUSTAKA

Aliska, G., Setiabudy, R., Purwantyastuti, P., Karuniawati, A., Sedono, R., Dewi, T. U., & Azwar, M. K. (2017). Optimal Amikacin Levels for Patients with Sepsis in Intensive Care Unit of Cipto Mangunkusumo Hospital, Jakarta, Indonesia. *Acta Medica Indonesiana*, *49*(3), 227–235.

Alumuri, T., Merugu, K., Amarababu, N. L. A., & Kurnool, A. (2022). Peramivir and Related Impurities in Rat Plasma and Its Applications in Pharmacokinetic Studies (Bioanalytical Method Development and Validation by LC-MS/MS). *International Journal of Applied Pharmaceutics*, 53–61. https://doi.org/10.22159/ijap.2022v14i5.45457

Aquino, M., Tinoco, M., Bicker, J., Falcão, A., Rocha, M., & Fortuna, A. (2023). Therapeutic Drug Monitoring of Amikacin in Neutropenic Oncology Patients. *Antibiotics*, *12*(2), 373. https://doi.org/10.3390/antibiotics12020373

Barco, S., Mesini, A., Barbagallo, L., Maffia, A., Tripodi, G., Pea, F., Saffioti, C., Castagnola, E., & Cangemi, G. (2020). A liquid chromatography-tandem mass spectrometry platform for the routine therapeutic drug monitoring of 14 antibiotics: Application to critically ill pediatric patients. *Journal of Pharmaceutical and Biomedical Analysis*, *186*, 113273. https://doi.org/10.1016/j.jpba.2020.113273

Barrantes-González, M., Grau, S., Conde-Estévez, D., Salas, E., & Marín-Casino, M. (2013). Influence of ethnicity on the pharmacokinetics of amikacin. *Revista Espanola de Quimioterapia : Publicacion Oficial de La Sociedad Espanola de Quimioterapia*, *26*(4), 346–352.

Bauer, L. A. (2008). *Applied Clinical Pharmacokinetics*. The Graw-Hill Companies. https://doi.org/10.1036/0071476288

Begun, D. A. (2011). *Amazing Android Apps For Dummies* (1st ed.). Wiley.

Bijleveld, Y., de Haan, T., Toersche, J., Jorjani, S., van der Lee, J., Groenendaal, F., Dijk, P., van Heijst, A., Gavilanes, A. W. D., de Jonge, R., Dijkman, K. P., van Straaten, H., Rijken, M., Zonnenberg, I., Cools, F., Nuytemans, D., & Mathôt, R. (2014). A Simple Quantitative Method Analysing Amikacin, Gentamicin, and Vancomycin Levels in Human Newborn Plasma Using Ion-Pair Liquid Chromatography/Tandem Mass Spectrometry and Its Applicability to A Clinical Study. *Journal of Chromatography. B, Analytical Technologies in the Biomedical and Life Sciences*, *951–952*(1), 110–118. https://doi.org/10.1016/J.JCHROMB.2014.01.035

Boidin, C., Bourguignon, L., Cohen, S., Roger, C., Lefrant, J.-Y., Roberts, J. A., Allaouchiche, B., Lepape, A., Friggeri, A., & Goutelle, S. (2019). Amikacin Initial Dose in Critically Ill Patients: a Nonparametric Approach To Optimize A Priori Pharmacokinetic/ Pharmacodynamic Target Attainments in Individual Patients. *Antimicrobial Agents and Chemotherapy*, *63*(11). https://doi.org/10.1128/AAC.00993-19

Bowker, K. E., Noel, A. R., Tomaselli, S., Attwood, M., & MacGowan, A. P. (2018). Pharmacodynamics of inhaled amikacin (BAY 41-6551) studied in an in vitro pharmacokinetic model of infection. *Journal of Antimicrobial Chemotherapy*, *73*(5), 1305–1313. https://doi.org/10.1093/jac/dky002

Bozkurt, G. Ç., Avci, N. M., & Savage, P. (2020). In Vitro Activities of the Cationic Steroid Antibiotics CSA-13, CSA-131, CSA-138, CSA-142, and CSA-192 Against Carbapenem-resistant Pseudomonas aeruginosa. *Turkish Journal of Pharmaceutical Sciences*, *17*(1), 63–67. https://doi.org/10.4274/tjps.galenos.2018.26566

Burton, M., & Donn, F. (2015). *Android Application Development For Dummies* (3rd ed.). Wiley.

Büyük, A., Yilmaz, F. F., Gül Yurtsever, S., & Hoşgör Limoncu, M. (2017). Antibiotic Resistance Profiles and Genotypes of Acinetobacter baumannii Isolates and In Vitro Interactions of Various Antibiotics in Combination with Tigecycline and Colistin. *Turkish Journal of Pharmaceutical Sciences*, *14*(1), 13–18. https://doi.org/10.4274/tjps.44127

Cajade, F., Beltrá-Picó, I., Ruiz-El Jerche, S., Viudez-Martínez, A., Bolea-Lacueva, A., Nalda-Molina, R., Ramón-López, A., & Serrano-Más, P. (2024). Comparison of two pharmacokinetic/ pharmacodynamic indices in critically ill patients treated with amikacin. *Section 4: Clinical Pharmacy Services*, A152.2-A153. https://doi.org/10.1136/ejhpharm-2024-eahp.313

Chauhan, B., & Jalalpure, S. (2016). Analysis of Amikacin in Human Serum by UHPLC With Fluorescence Detector Using Chloro-Formate Reagent With Glycine. *Pharmaceutical Methods*, *7*(2), 99–103. https://doi.org/10.5530/PHM.2016.7.15

Clarke, W., & Amitava, D. (2016). *Clinical Challenges in Therapeutic Drug Monitoring*. Elsevier. https://doi.org/10.1016/C2014-0-00411-X

da Silva, A. C. C., de Lima Feltraco Lizot, L., Bastiani, M. F., Antunes, M. V., Brucker, N., & Linden, R. (2019). Ready for TDM: Simultaneous Quantification of Amikacin, Vancomycin and Creatinine in Human Plasma Employing Ultra-Performance Liquid Chromatography-Tandem Mass Spectrometry. *Clinical Biochemistry*, *70*, 39–45. https://doi.org/10.1016/j.clinbiochem.2019.06.011

Depkes RI. (2009). *Pedoman Pemantauan Terapi Obat* (D. B. F. K. dan Klinik & D. B. kefarmasian dan A. Kesehatan (eds.)).

Dewi, T. U., . I., Sedono, R., Aliska, G., Azwar, M. K., & Setiabudy, R. (2019). Kidney Injury Molecule-1 As An Early Amikacin-Induced Nephrotoxicity Marker In Patients With Sepsis Hospitalized In The Intensive Care Unit. *International Journal of Applied Pharmaceutics*, 277–279. https://doi.org/10.22159/ijap.2019.v11s1.031

Dewi, T. U., Instiaty, Sedono, R., Aliska, G., Azwar, M. K., & Setiabudy, R. (2019).

Kidney Injury Molecule-1 as An Early Amikacin-Induced Nephrotoxicity Marker in Patients with Sepsis Hospitalized in The Intensive Care Unit. *International Journal of Applied Pharmaceutics*, 277–279. https://doi.org/10.22159/ijap.2019.v11s1.031

Dijkstra, J. A., Sturkenboom, M. G., Hateren, K. van, Koster, R. A., Greijdanus, B., & Alffenaar, J.-W. C. (2014). Quantification of Amikacin and Kanamycin in Serum Using A Simple and Validated LC–MS/MS Method. *Bioanalysis*, *6*(16), 2125–2133. https://doi.org/10.4155/bio.14.191

Dunvald, A. D., Iversen, D. B., Svendsen, A. L. O., Agergaard, K., Kuhlmann, I. B., Mortensen, C., Andersen, N. E., Järvinen, E., & Stage, T. B. (2022). Tutorial: Statistical analysis and reporting of clinical pharmacokinetic studies. *Clinical and Translational Science*, *15*(8), 1856–1866. https://doi.org/10.1111/cts.13305

Duszynska, W., Taccone, F. S., Hurkacz, M., Kowalska-Krochmal, B., Wiela-Hojeńska, A., & Kübler, A. (2013). Therapeutic drug monitoring of amikacin in septic patients. *Critical Care*, *17*(4), R165. https://doi.org/10.1186/cc12844

Evans, L., Rhodes, A., Alhazzani, W., Antonelli, M., Coopersmith, C. M., French, C., Machado, F. R., Mcintyre, L., Ostermann, M., Prescott, H. C., Schorr, C., Simpson, S., Wiersinga, W. J., Alshamsi, F., Angus, D. C., Arabi, Y., Azevedo, L., Beale, R., Beilman, G., … Levy, M. (2021). Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock 2021. *Critical Care Medicine*, *49*(11), e1063–e1143. https://doi.org/10.1097/CCM.0000000000005337

Hammett-Stabler, C. A., & Johns, T. (1998). Laboratory guidelines for monitoring of antimicrobial drugs. National Academy of Clinical Biochemistry. *Clinical Chemistry*, *44*(5), 1129–1140.

Handari, B. D., Djajadisastra, J., & Silaban, D. R. (2010). Pengembangan Perangkat Lunak Simulasi Komputer Sebagai Alat Bantu Dalam Analisis Farmakokinetik. *MAKARA of Science Series*, *10*(1). https://doi.org/10.7454/mss.v10i1.74

Harahap, Y., Andriyani, N., & . H. (2018). Method Development and Validation of Lercanidipine in Human Plasma by Liquid Chromatography Tandem-Mass Spectrometry. *International Journal of Applied Pharmaceutics*, *10*(4), 87. https://doi.org/10.22159/ijap.2018v10i4.26544

Harahap, Y., Steven, S., & Suryadi, H. (2022). Development and Validation of a UPLC-MS/MS Method with Volumetric Absorptive Microsampling to Quantitate Cyclophosphamide and 4-hydroxycyclophosphamide. *Frontiers in Pharmacology*, *13*. https://doi.org/10.3389/fphar.2022.928721

Hasanah, Y. I. F., Harahap, Y., & Suryadi, H. (2021). Development and Validation Method of Cyclophosphamide and 4-hydroxycyclophosphamide with 4-hydroxycyclophosphamide-d4 as Internal Standard in Dried Blood Spots Using UPLC-MS/MS. *International Journal of Applied Pharmaceutics*, *13*(2),

148–152. https://doi.org/10.22159/ijap.2021v13i2.39590

Health Protection Branch of Canada. (1997). *Standards for Comparative Bioavailability Studies Involving Drugs with a Narrow Therapeutic Range-oral Dosage Form*.

ICH. (2022). *Harmonised Guideline Bioanalytical Method Validation and Study Sample Analysis M10* (pp. 1–59).

Ikawati, Z., Askitosari, T., Hakim, L., Tucci, J., & Mitchell, J. (2015). Allele Frequency Distributions of the Drug Metabolizer Genes CYP2C9*2, CYP2C9*3, and CYP2C19*17 in the Buginese Population of Indonesia. *Current Pharmacogenomics and Personalized Medicine*, *12*(4), 236–239. https://doi.org/10.2174/1875692113666150410214416

Jacqz-Aigrain, E, & Choonara, I. (2021). *Paediatric Clinical Pharmacology* (Evelyne Jacqz-Aigrain & I. Choonara (eds.)). CRC Press. https://doi.org/10.1201/9780367800666

Jang, S. B., Lee, Y. J., Park, M. S., Song, Y. G., Kim, J.-H., Kim, H. K., Ahn, B. S., & Park, K. (2011). Population pharmacokinetics of amikacin in a Korean clinical population. *Int. Journal of Clinical Pharmacology and Therapeutics*, *49*(06), 371–381. https://doi.org/10.5414/CP201520

Kato, H., Hagihara, M., Hirai, J., Sakanashi, D., Suematsu, H., Nishiyama, N., Koizumi, Y., Yamagishi, Y., Matsuura, K., & Mikamo, H. (2017). Evaluation of Amikacin Pharmacokinetics and Pharmacodynamics for Optimal Initial Dosing Regimen. *Drugs in R&D*, *17*(1), 177–187. https://doi.org/10.1007/s40268-016-0165-5

Kato, H., Parker, S. L., Roberts, J. A., Hagihara, M., Asai, N., Yamagishi, Y., Paterson, D. L., & Mikamo, H. (2021). Population pharmacokinetics analysis of amikacin initial dosing regimen in elderly patients. *Antibiotics*, *10*(2), 1–13. https://doi.org/10.3390/antibiotics10020100

Kemenkes RI. (2016). *Peraturan Menteri Kesehatan Republik Indonesia Nomor 72 Tahun 2016 tentang Standar Pelayanan Kefarmasian di Rumah Sakit*.

Komalasari, R. (2020). Manfaat Teknologi Informasi dan Komunikasi di Masa Pandemi Covid 19. *Tematik*, *7*(1), 38–50. https://doi.org/10.38204/tematik.v7i1.369

Levison, M. E., & Levison, J. H. (2009). Pharmacokinetics and Pharmacodynamics of Antibacterial Agents. *Infectious Disease Clinics of North America*, *23*(4), 791–815. https://doi.org/10.1016/j.idc.2009.06.008

Logre, E., Enser, M., Tanaka, S., Dubert, M., Claudinon, A., Grall, N., Mentec, H., Montravers, P., & Pajot, O. (2020). Amikacin Pharmacokinetic/Pharmacodynamic in Intensive Care Unit: a Prospective Database. *Annals of Intensive Care*, *10*(1), 75. https://doi.org/10.1186/s13613-020-00685-5

Lortholary, O., Tod, M., Petitjean, O., & Cohen, Y. (1995). Aminoglycosides. *Medical Clinics of North America*, *79*(4), 761–787. https://doi.org/10.1016/S0025-7125(16)30038-4

Lu, C.-Y., & Feng, C.-H. (2007). Micro-scale analysis of aminoglycoside antibiotics in human plasma by capillary liquid chromatography and nanospray tandem mass spectrometry with column switching. *Journal of Chromatography A*, *1156*(1–2), 249–253. https://doi.org/10.1016/j.chroma.2007.01.001

Mahmoudi, L., Mohammadpour, A. H., Ahmadi, A., Niknam, R., & Mojtahedzadeh, M. (2013). Influence of Sepsis on Higher Daily Dose of Amikacin Pharmacokinetics in Critically Ill Patients. *European Review for Medical and Pharmacological Sciences*, *17*(3), 285–291.

Makridakis, S. (1993). Accuracy measures: theoretical and practical concerns. *International Journal of Forecasting*, *9*(4), 527–529. https://doi.org/10.1016/0169-2070(93)90079-3

Marsot, A., Guilhaumou, R., Riff, C., & Blin, O. (2017). Amikacin in Critically Ill Patients: A Review of Population Pharmacokinetic Studies. *Clinical Pharmacokinetics*, *56*(2), 127–138. https://doi.org/10.1007/s40262-016-0428-x

Matar, K. M., Al-lanqawi, Y., Abdul-Malek, K., & Jelliffe, R. (2013). Amikacin Population Pharmacokinetics in Critically Ill Kuwaiti Patients. *BioMed Research International*, *2013*, 1–8. https://doi.org/10.1155/2013/202818

Matcha, S., Chaudhari, B. B., Mallayasamy, S., Lewis, L. E., & Moorkoth, S. (2022). Ion-Pairing Reagent Free Hydrophilic Interaction LC-MS/MS Method for Therapeutic Drug Monitoring of Amikacin in Neonates. *Journal of Applied Pharmaceutical Science*. https://doi.org/10.7324/JAPS.2023.62354

Medellín-Garibay, S. E., Romano-Aguilar, M., Parada, A., Suárez, D., Romano-Moreno, S., Barcia, E., Cervero, M., & García, B. (2022). Amikacin pharmacokinetics in elderly patients with severe infections. *European Journal of Pharmaceutical Sciences*, *175*, 106219. https://doi.org/10.1016/J.EJPS.2022.106219

Munar, M. Y., Singh, H., Belle, D., Brackett, C. C., & Earle, S. B. (2006). The Use of Wireless Laptop Computers for Computer-Assisted Learning in Pharmacokinetics. *American Journal of Pharmaceutical Education*, *70*(1), 04. https://doi.org/10.5688/aj700104

Notario, D. (2018). Pemodelan Farmakokinetika Berbasis Populasi dengan R: Model Dua Kompartemen Ekstravaskuler. *Jurnal Farmasi Galenika*, *4*(1), 26–35. https://doi.org/https://bestjournal.untad.ac.id/index.php/Galenika/article/view/9777

Pérez-Blanco, J. S., Sáez Fernández, E. M., Calvo, M. V., Lanao, J. M., & Martín-

Suárez, A. (2021). Evaluation of Current Amikacin Dosing Recommendations and Development of an Interactive Nomogram: The Role of Albumin. *Pharmaceutics*, *13*(2), 264. https://doi.org/10.3390/pharmaceutics13020264

Pressman, R. S. (2014). *Software Engineering: A Practitioner's Approach*. McGraw-Hill Education.

Quensland Health. (2018). *Aminoglycoside Dosing in Adults* (QLD: Queensland Health (ed.)). Department of Health.

Raaijmakers, J., Schildkraut, J. A., Hoefsloot, W., & van Ingen, J. (2021). The role of amikacin in the treatment of nontuberculous mycobacterial disease. *Expert Opinion on Pharmacotherapy*, *22*(15), 1961–1974. https://doi.org/10.1080/14656566.2021.1953472

Ramirez, M., & Tolmasky, M. (2017). Amikacin: Uses, Resistance, and Prospects for Inhibition. *Molecules*, *22*(12), 2267. https://doi.org/10.3390/molecules22122267

Rao, P. T. S. R. K. P. (2022). HPLC Method Development and Validation of Lercanidipine HCl and Atenolol, Characterization of Its Degradants by LC-MS/MS. *International Journal of Applied Pharmaceutics*, 125–134. https://doi.org/10.22159/ijap.2022v14i2.43624

Raut, A., Sharma, D., & Suvarna, V. (2022). A Status Update on Pharmaceutical Analytical Methods of Aminoglycoside Antibiotic: Amikacin. *Critical Reviews in Analytical Chemistry*, *52*(2), 375–391. https://doi.org/10.1080/10408347.2020.1803042

Rikomah, S. E. (2016). *Farmasi Klinik* (1st ed.). Deepublish.

Ruiz, J., Ramirez, P., Company, M. J., Gordon, M., Villarreal, E., Concha, P., Aroca, M., Frasquet, J., Remedios-Marqués, M., & Castellanos-Ortega, Á. (2018). Impact of amikacin pharmacokinetic/pharmacodynamic index on treatment response in critically ill patients. *Journal of Global Antimicrobial Resistance*, *12*, 90–95. https://doi.org/10.1016/j.jgar.2017.09.019

Sani, A. N. (2021). Implementation of Therapeutic Drug Monitoring in Indonesia. *Jurnal Ayurveda Medistra*, *3*(2). https://doi.org/10.51690/medistra-jurnal123.v3i2.44

Sani, Mohamad, N., Chlliah, O., Azmi, Y., & Rusli, R. (2019). *Clinical Pharmacokinetics Pharmacy Handbook* (2nd ed.). Clinical Pharmacy Working Committee (Clinical Pharmacokinetics Subspecialty) Pharmacy Practice and Development Division Ministry of Health Malaysia.

Saudagar, R. B., & Thete, P. G. (2018). Bioanalytical Method Validation: A Concise Review. *Asian Journal of Research in Pharmaceutical Science*, *8*(2), 107. https://doi.org/10.5958/2231-5659.2018.00019.X

Sentat, T., Lucida, H., Widyati, W., Nasif, H., Harahap, Y., Harijono, P., & Ratih,

R. (2024a). Amikacin Dosing Analysis in Sepsis Treatment: A Pharmacokinetic Study Based on Therapeutic Drug Monitoring. *Journal of Research in Pharmaceutical Science*, *10*(8).

Sentat, T., Lucida, H., Widyati, W., Nasif, H., Harahap, Y., Harijono, P., & Ratih, R. (2024b). Development and Validation of a Bioanalytical Method for Therapeutic Drug Monitoring of Amikacin in Human Plasma Using Ultra-Performance Liquid Chromatography-Tandem Mass Spectrometry. *International Journal of Applied Pharmaceutics*, 140–144. https://doi.org/10.22159/ijap.2024.v16s1.30

Shargel, L., & Yu, A. B. C. (2016). *Applied Biopharmaceutics and Pharmacokinetics* (7th ed.). The Mc Graw-Hill Companies.

Simeoli, R. (2023). Editorial: Therapeutic drug monitoring (TDM): a useful tool for pediatric pharmacology applied to routine clinical practice, Volume II. *Frontiers in Pharmacology*, *14*. https://doi.org/10.3389/fphar.2023.1250784

Singer, M., Deutschman, C. S., Seymour, C. W., Shankar-Hari, M., Annane, D., Bauer, M., Bellomo, R., Bernard, G. R., Chiche, J.-D., Coopersmith, C. M., Hotchkiss, R. S., Levy, M. M., Marshall, J. C., Martin, G. S., Opal, S. M., Rubenfeld, G. D., van der Poll, T., Vincent, J.-L., & Angus, D. C. (2016). The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). *JAMA*, *315*(8), 801. https://doi.org/10.1001/jama.2016.0287

Singh, I., Juneja, P., Kaur, B., & Kumar, P. (2013). Pharmaceutical Applications of Chemometric Techniques. *ISRN Analytical Chemistry*, *2013*, 1–13. https://doi.org/10.1155/2013/795178

Sommerville, I. (2016). *Software Engineering* (10th ed.). Pearson.

Taccone, F., Laterre, P.-F., Spapen, H., Dugernier, T., Delattre, I., Layeux, B., De Backer, D., Wittebole, X., Wallemacq, P., Vincent, J.-L., & Jacobs, F. (2010). Revisiting the Loading Dose of Amikacin for Patients with Severe Sepsis and Septic Shock. *Critical Care*, *14*(2), R53. https://doi.org/10.1186/cc8945

Tsai, D., Jamal, J.-A., Davis, J. S., Lipman, J., & Roberts, J. A. (2015). Interethnic Differences in Pharmacokinetics of Antibacterials. *Clinical Pharmacokinetics*, *54*(3), 243–260. https://doi.org/10.1007/s40262-014-0209-3

Urban, A. W., & Craig, W. A. (1997). Daily dosage of aminoglycosides. *Current Clinical Topics in Infectious Diseases*, *17*, 236–255. http://www.ncbi.nlm.nih.gov/pubmed/9189668

US FDA. (2018). *Bioanalytical Method Validation Guidance for Industry* (Food and Drug Administration, C. for D. E. Research, & C. for V. Medicine (eds.)).

Utami, E. D., Puspitasari, I., Humardewayanti, R. A., Lukitaningsih, E., Noviana, E., Pebriana, R. B., & Prihati, D. A. (2024). Development and validation of LC-MS/MS method for the determination of amikacin in human plasma and its application in adult hospitalized patients in Yogyakarta Indonesia. *Journal*

of Applied Pharmaceutical Science, *14*(03), 108–118. https://doi.org/10.7324/JAPS.2024.142046

UU RI. (2002). *Sistem Nasional Penelitian, Pengembangan, dan Penerapan Ilmu Pengetahuan dan Teknologi*.

Wahyono, D. (2016). *Farmakokinetika Klinik: Konsep Dasar dan Terapan dalam Farmasi Klinik* (2nd ed.). Gadjah Mada University Press.

WHO. (2000). *Obesity: Preventing and Managing the Global Epidemic*. https://iris.who.int/handle/10665/42330

Xu, L., Cheng, X., Zhu, G., Hu, J., Li, Q., & Fan, G. (2022). Therapeutic Drug Monitoring of Amikacin: Quantification in Plasma by Liquid Chromatography-Tandem Mass Spectrometry and Work Experience of Clinical Pharmacists. *European Journal of Hospital Pharmacy*, *29*(e1), e77–e82. https://doi.org/10.1136/ejhpharm-2021-003049

Zeghina, I., Ouar, I. El, Tartouga, M. A., Mokhtari, M. B., Elieh- Ali-Komi, D., Gali, L., & Bensouici, C. (2024). GC-MS profiling and pharmacological potential of Physconia venusta (Ach.) Poelt. *Turkish Journal of Pharmaceutical Sciences*, *21*(3), 243–251. https://doi.org/10.4274/tjps.galenos.2023.91126