

## **BAB 5**

### **KESIMPULAN DAN SARAN**

#### **5.1 Kesimpulan**

Berdasarkan hasil dari kajian pustaka 6 artikel ilmiah terkait dengan efektivitas dan efek samping Deksametason pada pasien COVID-19 derajat berat atau kritis disimpulkan bahwa:

1. Deksametason dengan dosis 6 – 20 mg intravena dan dosis terdapat dapat memberikan hasil yang efektif dalam perbaikan SpO<sub>2</sub>, CRP, FiO<sub>2</sub>, dan rasio SpO<sub>2</sub>/FiO<sub>2</sub> dengan diperhatikan dosis yang berkaitan dengan terjadinya efek samping yang terjadi.
2. Efek samping pada pasien COVID-19 yang dominan terjadi yaitu seperti hiperglikemia.

#### **5.2 Saran**

Berdasarkan hasil dari kajian pustaka 6 artikel ilmiah terkait dengan efektivitas dan efek samping Deksametason pada pasien COVID-19 derajat berat atau kritis dapat diberikan saran:

1. Perlu dilaksanakan kajian pustaka lebih lanjut untuk mengetahui efektivitas dan efek samping penggunaan Deksametason secara per oral yang dibandingkan dengan rute intravena pada pasien COVID-19.
2. Perlu dilaksanakan kajian pustaka lebih lanjut untuk mengetahui efektivitas dan efek samping penggunaan Deksametason pasien COVID-19 dengan gejala sedang dibandingkan dengan gejala berat atau kritis.

## DAFTAR PUSTAKA

- Abouir, K., Gosselin, P., Stéphane Guerrier., Daali, Y., Desmeules, J., Grosgrurin., Olivier, Reny, J.-L., Samer, C., Calmy, A., Kuntheavy., and Lorenzini, R. I. 2022, Dexamethasone exposure in normal-weight and obese hospitalized COVID-19 patients: An observational exploratory trial, *Clin Transl Sci*, **15(7)** : 1796–1804.
- Armitage, L.C., and Brettell, R. 2020, Inhaled corticosteroids: a rapid review of the evidence for treatment or prevention of COVID-19. Diakses pada 14 September 2021, <https://www.cebm.net/covid-19/inhaled-corticosteroids-a-rapid-review-of-the-evidence-for-treatment-or-prevention-of-covid-19/>.
- Ahmed, M. H. and Hassan, A. 2020, Dexamethasone for the Treatment of Coronavirus Disease (COVID-19): a Review, *SN Comprehensive Clinical Medicine*, **2(12)**: 2637–2646.
- Ali, B. H. and Hamza, A. A. 2022, Effect of dexamethasone in two different doses on specific biochemical markers in patients with COVID-19, *Journal of Emergency Medicine Trauma and Acute Care*, **3(2022)**: 1-6.
- Alkattan, A. and Kandeel, M. 2021, Dexamethasone as a Treatment of COVID-19, *Dr. Sulaiman Al Habib Medical Journal*, **3(1)**:7-9.
- Ansar, W. and Ghosh, S. 2016, Biology of C reactive protein in health and disease, *Immunologic research*, **56(1)**: 131-142.
- Arcani, R., Cauchois, R., Suchon, P., Jean, R., Jarrot, P. A., Gomes De Pinho, Q., Dalmas, J. B., Jean, E., Andre, B., Veit, V., Koubi, M., and Kaplanski, G. 2022, Factors associated with dexamethasone efficacy in COVID-19. A retrospective investigative cohort study. *Journal of medical virology*, **94(7)**: 3169–3175.
- Bangash, M. N., Patel, J. and Parekh, D. 2020, COVID-19 and the liver: little cause for concern, *The Lancet Gastroenterology and Hepatology*, **5(6)**: 529–530.
- Bedah, S., Chairlan., dan Sari, I.N. 2021, Respons C-Reactive Protein ( CRP ) dan Laju Endap Darah (LED) Sebagai Petanda Inflamasi Pada Pasien Covid-19, *Open Journal System*, **7(2)**: 157–164.

- Bender, L. 2020, Pesan dan Kegiatan Utama Pencegahan dan Pengendalian COVID-19 di Sekolah, *Unicef*, 1–14.
- Canese, K. and Weis, S. 2013, *PubMed: The bibliographic database*, The NCBI Handbook, 13–24. Available at: <http://www.ncbi.nlm.nih.gov/books/NBK153385/>.
- Chen, F., Hao, L., Zhu, S., Yang, X., Shi, W., Zheng, Kai., Wang, T., and Chen, H. 2021, Potential Adverse Effects of Dexamethasone Therapy on COVID-19 Patients: Review and Recommendations, *Infect Dis Ther*, **(10)**:1907-1931.
- Chilamakuri, R. and Agarwal, S. 2021, Covid-19: Characteristics and therapeutics, *Cells*, **10(2)**: 1–29.
- Ciriaco, M., Ventrice, P., Russo, G., Scicchitano, M., Mazzitello, G., Scicchitano, F., and Russo, E. 2013, Corticosteroid-related central nervous system side effects, *Journal of Pharmacology and Pharmacotherapeutics*, **4(1)**: S94-S98.
- Corbett, A.H., Dana, W.J., Fullerahme, M.A.L., Gallagher, J.C., Golembiewski, J.A., Gonzales, J.P., Lowe, J.F., Amy, R., Snoke, J., and Sallie, Y. 2014, American Pharmacists Association. (2014). *Drug Information Handbook with International Trades Names Index*, 23 edition, Lexi-Comp for the American Pharmacists Association, Ohio.
- Coutinho, A. E. and Chapman, K. E. 2011, The anti-inflammatory and immunosuppressive effects of glucocorticoids, recent developments and mechanistic insights, *Molecular and Cellular Endocrinology*, **335(1)**: 2–13.
- COVID-19 Treatment Guidelines Panel. Coronavirus Disease 2019 (COVID-19) Treatment Guidelines. National Institutes of Health. Diakses pada 20 oktober 2022 <https://www.covid19treatmentguidelines.nih.gov/>.
- Diaz, J. H. 2021, Hypothesis: Angiotensin-converting enzyme inhibitors and angiotensin receptor blockers may increase the risk of severe COVID-19, *Journal of Travel Medicine*, **27(3)**: 1–7.

- Djulgovic, B. and Guyatt, G. H. 2017, Progress in evidence-based medicine: a quarter century on, *The Lancet*, **390(10092)**: 415–423.
- Erlangga, M. E., Sitanggang, R. H., dan Bisri, T. 2015, Perbandingan Pemberian Deksametason 10 mg dengan 15 mg Intravena sebagai Adjuvan Analgetik terhadap Skala Nyeri Pascabedah pada Pasien yang Dilakukan Radikal Mastektomi Termodifikasi, *Jurnal Anestesi Perioperatif*, **3(3)**: 146–154.
- FDA. 2021, Coronavirus Disease 2019 Testing Basics. Diakses pada 14 September 2021, <https://www.fda.gov/media/14061/download>.
- Fitriani, N.I. 2020, Tinjauan Pustaka Covid-19: Virologi, Patogenesis, Dan Manifestasi Klinis, *Jurnal Medika Malahayati*, **4(3)**: 194-201.
- Fiorini, N., Lipman, D. J. and Lu, Z. 2017, Towards PubMed 2.0, *eLife*, **6**: 4–7.
- Fox, S. H., Katzenschlager R., Lim, Shen-Yang., Ravina, B., Seppi, K., Poewe, W., Rascol, O., Goetz, C.G., and Sampaio, C. 2011, The movement disorder society evidence-based medicine review update: Treatments for the motor symptoms of Parkinson's disease, *Movement Disorders*, **26(3)**: 2–41.
- Dastenaee, Z. H., Bahadori, A., Dehghani, M., Asadi-Samani, M., Izadi, I., & Shahraki, H. R. 2022, Comparison of the effect of intravenous dexamethasone and methylprednisolone on the treatment of hospitalized patients with COVID-19: a randomized clinical trial. *International Journal of Infectious Diseases*, **122(2022)**: 659–664.
- Di Gennaro, F., Fizzol, D., Marotta, C., Antunes, M., Racalbuto, V., Veronese, N., and Smith, L. 2020, Coronavirus diseases (COVID-19) current status and future perspectives: A narrative review, *International Journal of Environmental Research and Public Health*, **17(8)**: 1-11.
- Gorman, K. O. and Macintosh, R. 2013, Research Methods for Business and Management. ch. 4, *The Great Indian Phone Book*, 115–142.
- Gulick, R. M., Sobieszczyk, M.E., Landry, D.W., and Hollenberg A.N. 2020, Prioritizing clinical research studies during the COVID-19 pandemic: Lessons from New York City, *Journal of Clinical Investigation*, **130(9)**: 4522–4524.

- Hidayani, W. R. 2020, Faktor Faktor Risiko Yang Berhubungan Dengan COVID 19 : Literature Review, *Jurnal Untuk Masyarakat Sehat (JUKMAS)*, **4(2)**: 120–134.
- Ho, K. S., Narasimhan, B., Difabrizio, L., Rogers, L., Bose, S., Li, L., Chen, R., Sheehan, J., El-Halabi, M. A., Sarosky, K., Wang, Z., Eisenberg, E., Powell, C., and Steiger, D. 2021, Impact of corticosteroids in hospitalised COVID-19 patients, *BMJ open respiratory research*, **8(1)**: 1-8.
- Ibrahim, H. K., Ahseen, N. A., Ahmed, T. I., Ahseen, N. A., Al-Awkally, N.-A. M., and Yousuf, A. 2022, Evaluation of dexamethasone effects in COVID-19 treatment. *International Journal of Health Sciences*, **6(S1)**: 546–554.
- Johan, R. 2015, Penggunaan Kortikosteroid Topikal yang Tepat, *Iai*, **42(4)**: 308–312.
- Katzung, B.G., 2017, *Basic and Clinical Pharmacology 14<sup>th</sup> Edition*. New York: The McGraw-Hill Companies.
- Keller, M. J., Kitsis, E. A., Arora, S., Chen, J. T., Agarwal, S., Ross, M. J., Tomer, Y., and Southern, W. 2020, Effect of Systemic Glucocorticoids on Mortality or Mechanical Ventilation in Patients With COVID-19. *Journal of hospital medicine*, **15(8)**: 489–493
- Kementerian Kesehatan RI, 2020, *Farmakope Indonesia Edisi VI*, Jakarta: Kementerian Kesehatan RI.
- Kementerian Kesehatan RI, 2020, *Pedoman Pencegahan dan Pengendalian Corona Virus Disease (Covid-19) Revisi ke-5*, Jakarta: Departemen Kesehatan Republik Indonesia.
- Kim, W. Y., Kweon O.J., Cha, M.J., Baek, M.S., and Choi, H.C. 2021, Deksametason may improve severe COVID-19 via ameliorating endothelial injury and inflammation: A preliminary pilot study, *PLoS ONE*, **16(7)**: 1–15.
- Ko, J. J., Wu, C., Mehta, N., Wald-Dickler, N., Yang, W., and Qiao, R. 2021, A Comparison of Methylprednisolone and Deksametason in Intensive Care Patients With COVID-19, *Journal of Intensive Care Medicine*, **36(6)**: 673–680.
- Li, X., Xhong, X., Wang, Y., Zeng, Xianto, Luo, T. and Liu, Qing. 2021, Clinical determinants of the severity of COVID-19: A systematic review and meta-analysis, *PLoS ONE*, **16(5)**: 1–21.

- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ionnidis, J. P., Clarke, M., Devereaux, P. J., Kleijnen, J., and Moher, D. 2009, The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration, *PLoS Medicine*, **6**(7).
- Luminturahardjo, W. 2021, Peranan Probiotik dalam Penanganan Infeksi, *Continuing Medical Education*, **48**(5): 273–278.
- Mahase, E. 2020, Covid-19: Low dose steroid cuts death in ventilated patients by one third, trial finds, *British Medical Journal Publishing Group*, United Kingdom.
- Maggio, L. A., Sewell, J. L. and Artino, A. R. 2016, The Literature Review: A Foundation for High-Quality Medical Education Research, *Journal of Graduate Medical Education*, **8**(3): 297-303.
- Mahobia, A. 2019, *PubMed Search: How to get Optimum Results?*, *Delhi Journal of Ophthalmology*, **29**(4): 17-21.
- Marzali, Amri. 2016, Menulis Kajian Pustaka, *Jurnal Etnosia*, **1**(2).
- Mesa Sukmadani Rusdi. 2021, Mini Review: Farmakologi pada Corona Virus Disease (Covid-19), *Jurnal Ilmu Kefarmasian*, **2**(1): 54-61.
- Mulimani, Priti S. 2017, Evidence-based practice and the evidence pyramid: A 21st century orthodontic odyssey, *American Journal of Orthodontics and Dentofacial Orthopedics*, **152**(1): 1-8.
- National Institutes of Health. 2020, Treatment Guidelines Panel Coronavirus Disease 2019 (COVID-19), *Nih*, 1–243.
- National Institute for Health and Care Excellence (NICE), 2021, *COVID-19 rapid guideline: Managing COVID-19*. Diakses pada 01 Oktober 2021 <https://www.nice.org.uk/guidance/ng191>.
- Noreen, S., Maqbool, I. and Madni, A. 2021, Deksametason: Therapeutic potential, risks, and future projection during COVID-19 pandemic, *European Journal of Pharmacology*, **894**(2021): 1-5.
- PDPI, PERKI, PAPDI, PERDATIN and IDAI. 2022, *Pedoman tatalaksana COVID-19 Edisi 4 Januari 2022*.
- Patel, S. K., Saikumar, G., Rana, J., Dhama, J., Yatoo, M.I., Tiwari, R., Rodriguez-Morales, A.J., and Dhama, K. 2020, Deksametason: A boon for critically ill COVID-19 patients?, *Travel Medicine and Infectious Disease*, **37**: 101844.

- Permatasari, N. N. P., Mawaddah, M. and Amani, Z. A. 2020, Review Artikel: Faktor Risiko Pasien Terinfeksi Covid-19 Dan Metode Pencegahannya, *Farmaka*, **18(1)**: 1–15.
- Ranjbar, K., Moghadami, M., Mirahmadizadeh3 , A., Fallahi, M.J., Khaloo, V. and Shahriarirad, R. 2021, Correction to: Methylprednisolone or Deksametason, which one is superior corticosteroid in the treatment of hospitalized COVID-19 patients: a triple-blinded randomized controlled trial, *BMC Infectious Diseases*, **21(1)**: 1–8.
- Rhou, Y. J. J., Hor, A., Wang, M., Wu, Y.-F., Jose, S., Chipps, D. R., & Cheung, N. W. 2022, Dexamethasone-induced hyperglycaemia in COVID-19: Glycaemic profile in patients without diabetes and factors associated with hyperglycaemia, *Diabetes Research and Clinical Practice*, **194(10)**: 110-115.
- Roever, L. 2018, PICO: model for clinical questions, *Evidence-Based Medicine*, **3(2)**: 1-2.
- Rusdi, M. S. 2021, Mini Review: Farmakologi pada Corona Virus Disease (Covid-19), *Lambung Farmasi: Jurnal Ilmu Kefarmasian*, **(103)**: 54–61.
- Sanders, J. M., Monogue, M.L., Jodlowski, T.Z., and Cutrell, J.B. 2020, Pharmacologic Treatments for Coronavirus Disease 2019 (COVID-19): A Review, *JAMA - Journal of the American Medical Association*, **323(18)**: 1824–1836.
- Satgas COVID, 2021, *Pengendalian COVID-19 Dengan 3M 3T Vaksinasi Displin Kompak dan Konsisten*, Satuan Tugas Penanganan COVID-19, Jakarta.
- Selcuk, A. A. 2019, A Guide for Systematic Reviews: PRISMA, *Turkish Archives of Otorhinolaryngology*, **57(1)**: 57–58.
- Selvaraj, V., Dapaah-Afriyie, K., Finn, A., and Flanagan, T. P. 2020, Short-Term Dexamethasone in Sars-CoV-2 Patients. *Rhode Island medical journal*, **103(6)**: 39–43.
- Steglitz, J., Warnick, J.L., Hoffman, S.A., Johnston , W., and Spring, B. 2015, *Evidence-Based Practice*. Second Edi, *International Encyclopedia of the Social & Behavioral Sciences: Second Edition*. Second Edi, Elsevier.

- Susilo, A., Rumende, C.M., Pitoyo, C.W., Santoso, W.D., Yulianti, M., and Herikurniawan. 2020, Coronavirus Disease 2019: Tinjauan Pustaka Terkini, *Jurnal Penyakit Dalam Indonesia*, **7(1)**: 45-50.
- Taboada, M., Rodríguez, N., Varela, P. M., Rodríguez, M. T., Abelleira, R., González, A., Casal, A., Díaz Peromingo, J. A., Lama, A., Domínguez, M. J., Rábade, C., Páez, E. M., Riveiro, V., Pernas, H., Beceiro, M. D. C., Caruezo, V., Naveira, A., Cariñena, A., Cabaleiro, T., Estany-Gestal, A., Álvarez-Escudero, J. 2022, Effect of high versus low dose of dexamethasone on clinical worsening in patients hospitalised with moderate or severe COVID-19 pneumonia: an open-label, randomised clinical trial, *The European respiratory journal*, **60(2)**: 1-11.
- Torjesen, I. 2020, Covid-19: Hydroxychloroquine does not benefit hospitalised patients, UK trial finds, *BMJ (Clinical research ed.)*, **369(6)**: 263-270.
- Toroghi, N., Abbasian, L., Nourian, A., Monfared, E.D., Khalili, H., Hasannezhad, M., Ghiasvand, F., Jafari, S., Kouchak, H.E., and Yekaninejad, M.S. 2022, Comparing efficacy and safety of different doses of dexamethasone in the treatment of COVID-19: a three-arm randomized clinical trial, *Pharmacol. Rep*, **74(1)**: 229–240.
- Vecchié, A., Batticciotto, A., Tangianu, F., Bonaventura, A., Pennella, B., Abenante, A., Corso, R., Grazioli, S., Mumoli, N., Para, O., Maresca, A. M., Dalla Gasperina, D., and Dentali, F. 2021, High-dose dexamethasone treatment for COVID-19 severe acute respiratory distress syndrome: a retrospective study. *Internal and emergency medicine*, **16(7)**: 1913–1919.
- Wardika, I. K., Putu, I. G. and Sikesa, H. 2021, Pengukuran Interleukin-6 ( IL-6 ), C-Reactive Protein ( CRP ) dan D-Dimer sebagai prediktor prognosis pada pasien COVID-19 gejala berat : sebuah tinjauan pustaka, *Intisari Sains Medis*, **12(3)**: 901–907.
- World Health Organization, 2021, Therapeutics and COVID-19: living guideline, Diakses pada 24 September 2021. <https://apps.who.int/iris/rest/bitstreams/1373042/retrieve>.
- Zhang, F., & Karam, J. G. 2021, Glycemic Profile of Intravenous Dexamethasone-Induced Hyperglycemia Using Continuous Glucose Monitoring. *The American journal of case reports*, **22(10)**: 1-11



Zhu, N., Zhang, D., Wang, W., Li, X., Yang, B., and Song, J. 2020, A Novel Coronavirus from Patients with Pneumonia in China, 2019, *New England Journal of Medicine*, **382(8)**: 727–733.