

## Daftar Pustaka

- Ahn, D. G., Shin, H. J., Kim, M. H., Lee, S., Kim, H. S., Myoung, J., *et al.* 2020. Current Status of Epidemiology, Diagnosis, Therapeutics, and Vaccines for Novel Coronavirus Disease 2019 (COVID-19). *J. Microbiol. Biotechnol.*, 330, 313-324.
- Al-Lami, R. A., Urban, R. J., Volpi, E., Algburi, A. M. A. & Baillargeon, J. 2020. Sex Hormones and Novel Corona Virus Infectious Disease (COVID-19). *Mayo Clin Proc*, 95, 1710-1714.
- Alsharif, W. & Qurashi, A. 2021. Effectiveness of COVID-19 diagnosis and management tools: A review. *The College of Radiographers*, 27, 1078-8174.
- Ambrosi, C., Prezioso, C., Checconi, P., Scribano, D., Sarshar, M., Capannari, M., *et al.* 2021. SARS-CoV-2: Comparative analysis of different RNA extraction methods. *J Virol Methods*, 287, 114008.
- Araf, Y., Akter, F., Tang, Y. D., Fatemi, R., Parvez, M. S. A., Zheng, C., *et al.* 2022. Omicron variant of SARS-CoV-2: Genomics, transmissibility, and responses to current COVID-19 vaccines. *J Med Virol*, 94, 1825-1832.
- Aranha, C., Patel, V., Bhor, V. & Gogoi, D. 2021. Cycle threshold values in RT-PCR to determine dynamics of SARS-CoV-2 viral load: An approach to reduce the isolation period for COVID-19 patients. *J Med Virol*, 93, 6794-6797.
- Arya, R., Kumari, S., Pandey, B., Mistry, H., Bihani, S. C., Das, A., *et al.* 2021. Structural insights into SARS-CoV-2 proteins. *Journal of Molecular Biology*, 433, 166725.
- Atzrodt, C. L., Maknojia, I., McCarthy, R. D. P., Oldfield, T. M., Po, J., Ta, K. T. L., *et al.* 2020. A Guide to COVID-19: a global pandemic caused by the novel coronavirus SARS-CoV-2. *The FEBS Journal*, 287, 3633–3650
- Bari, M. S., Hossaina, M. J., Akhtera, S. & Emran, T. B. 2021. Delta variant and black fungal invasion: A bidirectional assault might worsen the massive second/third stream of COVID-19 outbreak in South-Asia. *Ethics, Medicine and Public Health*, 19, 2352-5525.
- Biswas, S. K. & Mudi, S. R. 2020. Spike protein D614G and RdRp P323L: the SARS-CoV-2 mutations associated with severity of COVID-19. *Genomics Inform*, 18, e44.
- Böger, B., Fachi, M. M., Vilhena, R. O., Cobre, A. F., Tonin, F. S. & Pontarolo, R. 2021. Systematic review with meta-analysis of the accuracy of diagnostic tests for COVID-19. *Am J Infect Control*, 49, 21-29.
- Brüssow, H. 2022. COVID-19: Omicron - the latest, the least virulent, but probably not the last variant of concern of SARS-CoV-2. *Microb Biotechnol*, 15, 1927-1939.
- Cahyani, I., Putro, E. W., Ridwanuloh, A. M., Wibowo, S., Hariyatun, H., Syahputra, G., *et al.* 2022. Genome Profiling of SARS-CoV-2 in Indonesia, ASEAN and the Neighbouring East Asian Countries: Features, Challenges and Achievements. 14, 778.

- Calistri, P., Amato, L., Puglia, I., Cito, F., Di Giuseppe, A., Danzetta, M. L., *et al.* 2021. Infection sustained by lineage B.1.1.7 of SARS-CoV-2 is characterised by longer persistence and higher viral RNA loads in nasopharyngeal swabs. *Int J Infect Dis*, 105, 753-755.
- CDC. 2022. SARS-CoV-2 Variant Classifications and Definitions. <https://www.cdc.gov/coronavirus/2019-ncov/variants>: Center for Disease Control and Prevention.
- Chams, N., Chams, S., Badran, R., Shams, A., Araji, A., Raad, M., *et al.* 2020. COVID-19: A Multidisciplinary Review. *Front Public Health*, 8, 383.
- Choi, J. Y. & Smith, D. M. 2021. SARS-CoV-2 Variants of Concern. *Yonsei Med J*, 62, 961-968.
- De Maio, N., Walker, C. R., Turakhia, Y., Lanfear, R., Corbett-Detig, R. & Goldman, N. 2021. Mutation rates and selection on synonymous mutations in SARS-CoV-2. *bioRxiv*.
- Debnath, M., Banerjee, M. & Berk, M. 2020. Genetic gateways to COVID-19 infection: Implications for risk, severity, and outcomes. *Faseb J*, 34, 8787-8795.
- DemİR, A. B., Benvenuto, D., Abacioğlu, H., Angeletti, S. & Ciccozzi, M. 2020. Identification of the nucleotide substitutions in 62 SARS-CoV-2 sequences from Turkey. *Turk J Biol*, 44, 178-184.
- Eruera, A. R., McSweeney, A. M., Mckenzie-Goldsmith, G. M. & Ward, V. K. 2021. Protein Nucleotidylylation in +ssRNA Viruses. *Viruses*, 13.
- Eskier, D., Karakülah, G., Suner, A. & Oktay, Y. 2020. RdRp mutations are associated with SARS-CoV-2 genome evolution. *PeerJ*, 8, e9587.
- Feng, W., Newbigging, A. M., Le, C., Pang, B., Peng, H., Cao, Y., *et al.* 2020. Molecular Diagnosis of COVID-19: Challenges and Research Needs. *Anal Chem*, 92, 10196-10209.
- Fiolet, T., Kherabi, Y., Macdonald, C.-J., Ghosn, J. & Peiffer-Smadja, N. 2022. Comparing COVID-19 vaccines for their characteristics, efficacy and effectiveness against SARS-CoV-2 and variants of concern: a narrative review. *Clinical Microbiology and Infection*, 28, 202-221.
- Forni, D., Cagliani, R., Pontremoli, C., Clerici, M. & Sironi, M. 2022. The substitution spectra of coronavirus genomes. *Brief Bioinform*, 23.
- Forster, P., Forster, L., Renfrew, C. & Forster, M. 2020. Phylogenetic network analysis of SARS-CoV-2 genomes. *Proc Natl Acad Sci U S A*, 117, 9241-9243.
- Gao, Y., Yan, L., Huang, Y., Liu, F., Zhao, Y., Cao, L., *et al.* 2020. Structure of the RNA-dependent RNA polymerase from COVID-19 virus. *Science*, 368, 779-782.
- Garrett, N., Tapley, A., Andriesen, J., Seocharan, I., Fisher, L. H., Bunts, L., *et al.* 2022. High Rate of Asymptomatic Carriage Associated with Variant Strain Omicron. *medRxiv*.
- Hadj Hassine, I. 2022. Covid-19 vaccines and variants of concern: A review. *Rev Med Virol*, 32, e2313.
- Haitao, T., Vermunt, J. V., Abeykoon, J., Ghamrawi, R., Gunaratne, M., Jayachandran, M., *et al.* 2020. COVID-19 and Sex Differences: Mechanisms and Biomarkers. *Mayo Clin Proc*, 95, 2189-2203.

- Harrison, A. G., Lin, T. & Wang, P. 2020. Mechanisms of SARS-CoV-2 Transmission and Pathogenesis. *Trends Immunol*, 41, 1100-1115.
- Hendaus, M. A. & Jomha, F. A. 2021. Delta variant of COVID-19: A simple explanation. *Qatar Med J*, 2021, 49.
- Hu, B., Guo, H., Zhou, P. & Shi, Z.-L. 2021. Characteristics of SARS-CoV-2 and COVID-19. *Nat Rev Microbiol*, 12, 141-154.
- Ilmjärv, S., Abdul, F., Acosta-Gutiérrez, S., Estarellas, C., Galdadas, I., Casimir, M., et al. 2021. Concurrent mutations in RNA-dependent RNA polymerase and spike protein emerged as the epidemiologically most successful SARS-CoV-2 variant. *Scientific Reports*, 11, 13705.
- Jhun, H., Park, H.-Y., Hisham, Y., Song, C.-S. & Kim, S. 2021. SARS-CoV-2 Delta (B.1.617.2) Variant: A Unique T478K Mutation in Receptor Binding Motif (RBM) of Spike Gene. *Immune Netw.*, 5, 32.
- Jiang, F., Deng, L., Zhang, L., Cai, Y., Cheung, C. W. & Xia, Z. 2020. Review of the Clinical Characteristics of Coronavirus Disease 2019 (COVID-19). *J Gen Intern Med*, 35, 1545–9.
- Jiang, Y., Yin, W. & Xu, H. E. 2021. RNA-dependent RNA polymerase: Structure, mechanism, and drug discovery for COVID-19. *Biochemical and Biophysical Research Communications*, 538, 47-53.
- Jin, Y., Yang, H., Ji, W., Wu, W., Chen, S., Zhang, W., et al. 2020. Virology, Epidemiology, Pathogenesis, and Control of COVID-19. *Viruses*, 12.
- Jutzeler, C. R., Bourguignon, L., Weis, C. V., Tong, B., Wong, C., Rieck, B., et al. 2020. Comorbidities, clinical signs and symptoms, laboratory findings, imaging features, treatment strategies, and outcomes in adult and pediatric patients with COVID-19: A systematic review and meta-analysis. *Travel Medicine and Infectious Disease*, 37.
- Kadam, S. B., Sukhramani, G. S., Bishnoi, P., Pable, A. A. & Barvkar, V. T. 2021. SARS-CoV-2, the pandemic coronavirus: Molecular and structural insights. *J Basic Microbiol*, 61, 180-202.
- Kemkes 2022. Infeksi Emerging: Media Informasi Resmi Terkini Penyakit Infeksi Emerging. <https://infeksiemerging.kemkes.go.id/dashboard/covid-19>: Kementerian Kesehatan.
- Khan, M., Adil, S. F., Alkhathlan, H. Z., Tahir, M. N., Saif, S., Khan, M., et al. 2020. COVID-19: A Global Challenge with Old History, Epidemiology and Progress So Far. *Molecules*, 26, 39.
- Kidd, M., Richter, A., Best, A., Cumley, N., Mirza, J., Percival, B., et al. 2021. S-Variant SARS-CoV-2 Lineage B1.1.7 Is Associated With Significantly Higher Viral Load in Samples Tested by TaqPath Polymerase Chain Reaction. *J Infect Dis*, 223, 1666-1670.
- Luo, C. H., Morris, C. P., Sachithanandham, J., Amadi, A., Gaston, D., Li, M., et al. 2021. Infection with the SARS-CoV-2 Delta Variant is Associated with Higher Infectious Virus Loads Compared to the Alpha Variant in both Unvaccinated and Vaccinated Individuals. *medRxiv*.
- Mahata, L. E., Lailani, M., Rezvi, S. M., Putra, S. P. & Putra, A. E. 2022. Age and Sex Differences in COVID-19 Clinical Symptom: Analysis of 19,588 Indonesian Cases. *Open Access Macedonian Journal of Medical Sciences*, 10, 643-646.

- Mistry, P., Barmania, F., Mellet, J., Peta, K., Strydom, A., Viljoen, I. M., *et al.* 2021. SARS-CoV-2 Variants, Vaccines, and Host Immunity. *Front Immunol*, 12, 809244.
- NIH. 2021. Coronavirus Disease 2019 (COVID-19) Treatment Guidelines. <https://www.covid19treatmentguidelines.nih.gov/>: National Institutes of Health.
- Ong, S. W. X., Chiew, C. J., Ang, L. W., Mak, T. M., Cui, L., Toh, M., *et al.* 2021. Clinical and virological features of SARS-CoV-2 variants of concern: a retrospective cohort study comparing B.1.1.7 (Alpha), B.1.315 (Beta), and B.1.617.2 (Delta). *Clin Infect Dis*.
- Otto, S. P., Day, T., Arino, J., Colijn, C., Dushoff, J., Li, M., *et al.* 2021. The origins and potential future of SARS-CoV-2 variants of concern in the evolving COVID-19 pandemic. *Curr Biol*, 31, R918-r929.
- Pangolin. 2022. *cov-lineage* [Online]. [Accessed 21 Juni 2022].
- Pascarella, G., Strumia, A., Piliego, C., Bruno, F., Buono, R. D., Costa, F., *et al.* 2020. COVID-19 diagnosis and management: a comprehensive review. *J Intern Med*, 288, 192–206.
- Petros, B. A., Turcinovic, J., Welch, N. L., White, L. F., Kolaczyk, E. D., Bauer, M. R., *et al.* 2022. Early introduction and rise of the Omicron SARS-CoV-2 variant in highly vaccinated university populations. *Clin Infect Dis*.
- Platten, M., Hoffmann, D., Grosser, R., Wisplinghoff, F., Wisplinghoff, H., Wiesmüller, G., *et al.* 2021. SARS-CoV-2, CT-Values, and Infectivity—Conclusions to Be Drawn from Side Observations. 13, 1459.
- Rabaan, A. A., Tirupathi, R., Sule, A. A., Aldali, J., Mutair, A. A., Alhumaid, S., *et al.* 2021. Viral Dynamics and Real-Time RT-PCR Ct Values Correlation with Disease Severity in COVID-19. *Diagnostics (Basel)*, 11.
- Rao, S. N., Manissero, D., Steele, V. R. & Pareja, J. 2020. A Systematic Review of the Clinical Utility of Cycle Threshold Values in the Context of COVID-19. *Infect Dis Ther*, 9, 573-586.
- Rello, J., Belliato, M., Dimopoulos, M.-A., J.Giamarellos-Bourboulis, E., Jaksic, V., Martin-Loeches, I., *et al.* 2020. Update in COVID-19 in the intensive care unit from the 2020 HELLENICAthens International symposium. *Anaesth Crit Care Pain Med*, 39, 723–730.
- Ren, S. Y., Wang, W. B., Gao, R. D. & Zhou, A. M. 2022. Omicron variant (B.1.1.529) of SARS-CoV-2: Mutation, infectivity, transmission, and vaccine resistance. *World J Clin Cases*, 10, 1-11.
- Samudrala, P. K., Kumar, P., Choudhary, K., Thakur, N., Wadekar, G. S., Dayaramani, R., *et al.* 2020. Virology, pathogenesis, diagnosis and in-line treatment of COVID-19. *European Journal of Pharmacology*, 883.
- Sanjuán, R. & Domingo-Calap, P. 2016. Mechanisms of viral mutation. *Cell Mol Life Sci*, 73, 4433-4448.
- Seyedalinaghi, S., Mirzapour, P., Dadras, O., Pashaei, Z., Karimi, A., Mohssenipour, M., *et al.* 2021. Characterization of SARS-CoV-2 different variants and related morbidity and mortality: a systematic review. *Eur J Med Res*, 26, 51.
- Shah, V. P., Farah, W. H., Hill, J. C., Hassett, L. C., Binnicker, M. J., Yao, J. D., *et al.* 2021. Association Between SARS-CoV-2 Cycle Threshold Values and

- Clinical Outcomes in Patients With COVID-19: A Systematic Review and Meta-analysis. *Open Forum Infectious Diseases*, 8.
- Sreepadmanabh, M., Sahu, A. K. & Chande, A. 2020. COVID-19: Advances in diagnostic tools, treatment strategies, and vaccine development. *J Biosci*, 45.
- Tua, H., Tua, S., Gao, S., Shao, A. & Shenga, J. 2020. Current epidemiological and clinical features of COVID-19; a global perspective from China. *Journal of Infection*, 21, 1-9.
- Valley-Omar, Z., Marais, G., Iranzadeh, A., Naidoo, M., Korsman, S., Maponga, T., et al. 2022. Reduced amplification efficiency of the RNA-dependent-RNA-polymerase target enables tracking of the Delta SARS-CoV-2 variant using routine diagnostic tests. *Journal of Virological Methods*, 302, 114471.
- Wang, M. Y., Zhao, R., Gao, L. J., Gao, X. F., Wang, D. P. & Cao, J. M. 2020. SARS-CoV-2: Structure, Biology, and Structure-Based Therapeutics Development. *Front Cell Infect Microbiol*, 10, 587269.
- WHO. 2021a. *Coronavirus disease (COVID-19): Variants of SARS-CoV-2* [Online]. [Accessed 21 June 2022].
- WHO. 2021b. Therapeutics and COVID-19: living guideline. In: ORGANIZATION, W. H. (ed.). <https://www.who.int/publications/i/item/WHO-2019-nCoV-therapeutics-2021.3>.
- WHO. 2022. WHO Coronavirus (COVID-19) Dashboard. <https://covid19.who.int/>: <https://covid19.who.int/>.
- Yesudhas, D., Srivastava, A. & Gromiha, M. M. 2020. COVID-19 outbreak: history, mechanism, transmission, structural studies and therapeutics. *Infection*, 49, 199-213.
- Zhao, H., Lu, L., Peng, Z., Chen, L. L., Meng, X., Zhang, C., et al. 2022a. SARS-CoV-2 Omicron variant shows less efficient replication and fusion activity when compared with Delta variant in TMPRSS2-expressed cells. *Emerg Microbes Infect*, 11, 277-283.
- Zhao, N., Zhou, N., Fan, H., Ding, J., Xu, X., Dong, X., et al. 2022b. Mutations and Phylogenetic Analyses of SARS-CoV-2 Among Imported COVID-19 From Abroad in Nanjing, China. *Front Microbiol*, 13, 851323.