

DAFTAR PUSTAKA

- Accili, D. (2021). Can COVID-19 cause diabetes? *Nature Metabolism*, 3(2), 123–125. <https://doi.org/10.1038/s42255-020-00339-7>
- Ahlqvist, E., Storm, P., Käräjämäki, A., Martinell, M., Dorkhan, M., Carlsson, A., Vikman, P., Prasad, R. B., Aly, D. M., Almgren, P., Wessman, Y., Shaat, N., Spégel, P., Mulder, H., Lindholm, E., Melander, O., Hansson, O., Malmqvist, U., Lernmark, Å., ... Groop, L. (2018). Novel subgroups of adult-onset diabetes and their association with outcomes: A data-driven cluster analysis of six variables. *The Lancet. Diabetes & Endocrinology*, 6(5), 361–369. [https://doi.org/10.1016/S2213-8587\(18\)30051-2](https://doi.org/10.1016/S2213-8587(18)30051-2)
- Ahmed, MH., Hassan, A. (2020). Dexamethasone for the Treatment of Coronavirus Disease (COVID-19): a Review. *SN Compr Clin Med*, 2(12):2637-2646. doi: 10.1007/s42399-020-00610-8.
- Alimohamadi, Y., Yekta, E. M., Sepandi, M., Sharafoddin, M., Arshadi, M., & Hesari, E. (2022). Hospital length of stay for COVID-19 patients: A systematic review and meta-analysis. *Multidisciplinary Respiratory Medicine*, 17(1), 856. <https://doi.org/10.4081/mrm.2022.856>
- Alshrefy, A. J., Alwohaibi, R. N., Alhazzaa, S. A., Almaimoni, R. A., AlMusaillet, L. I., AlQahtani, S. Y., & Alshahrani, M. S. (2022). Incidence of Bacterial and Fungal Secondary Infections in COVID-19 Patients Admitted to the ICU. *International Journal of General Medicine*, 15, 7475–7485. <https://doi.org/10.2147/IJGM.S382687>
- Alsiö, Å., Nasic, S., Ljungström, L., & Jacobsson, G. (2021). Impact of obesity on outcome of severe bacterial infections. *PLoS ONE*, 16(5), e0251887. <https://doi.org/10.1371/journal.pone.0251887>
- Al-kuraishy, H. M., Al-Gareeb, A. I., Alblihed, M., Guerreiro, S. G., Cruz-Martins, N., & Batiha, G. E.-S. (2021). COVID-19 in Relation to Hyperglycemia and Diabetes Mellitus. *Frontiers in Cardiovascular Medicine*, 8. <https://www.frontiersin.org/articles/10.3389/fcvm.2021.644095>
- Al Sulaiman, K., Aljuhani, O., Bin Salah, K., Korayem, G. B., Eljaaly, K., Al Essa, M., Kharbosh, A., Al Harbi, F., Abuzaid, M., Al Bilal, S., Almagthali, A., Alsohemi, S., Alshabasy, A., Noureldeen, H., Aboudeif, M., Alshehri, A., & Vishwakarma, R. (2021). Single versus multiple doses of Tocilizumab in critically ill patients with coronavirus disease 2019 (COVID-19): A two-center, retrospective cohort study. *Journal of Critical Care*, 66, 44–51. <https://doi.org/10.1016/j.jcrc.2021.08.007>
- Al-Baadani, A., Eltayeb, N., Alsufyani, E., Albahrani, S., Basher, S., Albayat, H., Batubara, E., Ballool, S., Al Assiri, A., Faqihi, F., Musa, A. B., Robert, A. A., Alsherbeeni, N., & Elzein, F. (2021). Efficacy of tocilizumab in patients with severe COVID-19: Survival and clinical outcomes. *Journal of Infection and Public Health*, 14(8), 1021–1027. <https://doi.org/10.1016/j.jiph.2021.05.015>
- Alexiou, G. A., Tzima, A., Lianos, G. D., Lampros, M., Sotiropoulos, A., Rizos, D., Ygropoulou, O., Zika, J., Alexiou, E.-S., & Voulgaris, S. (2022).

- Neutrophil to lymphocyte ratio in the prediction of coagulopathy in traumatic brain injury. *Biomarkers in Medicine*, 16(3), 163–168. <https://doi.org/10.2217/bmm-2021-0582>
- Alhazzani, W., Møller, M. H., Arabi, Y. M., Loeb, M., Gong, M. N., Fan, E., Oczkowski, S., Levy, M. M., Derde, L., Dzierba, A., Du, B., Aboodi, M., Wunsch, H., Cecconi, M., Koh, Y., Chertow, D. S., Maitland, K., Alshamsi, F., Belley-Cote, E., ... Rhodes, A. (2020). Surviving Sepsis Campaign: Guidelines on the management of critically ill adults with Coronavirus Disease 2019 (COVID-19). *Intensive Care Medicine*, 46(5), 854–887. <https://doi.org/10.1007/s00134-020-06022-5>
- Ali Abdelhamid, Y., Kar, P., Finnis, M. E., Phillips, L. K., Plummer, M. P., Shaw, J. E., Horowitz, M., & Deane, A. M. (2016). Stress hyperglycaemia in critically ill patients and the subsequent risk of diabetes: A systematic review and meta-analysis. *Critical Care (London, England)*, 20(1), 301. <https://doi.org/10.1186/s13054-016-1471-6>
- Ali, A., Kamjani, MH., Kesselman, MM. (2020). The Role of Tocilizumab in Cytokine Storm and Improving Outcomes in COVID-19. *Recent Pat Antiinfect Drug Discov*, 15(2):104–112.
- Ali, N. (2020). Elevated level of C-reactive protein may be an early penanda to predict risk for severity of COVID-19. *J Med Virol*, 92(11):2409-2411. doi: 10.1002/jmv.26097.
- Arons, MM., Hatfield, KM., Reddy, SC., Kimball, A., James, A., Jacobs, JR.(2020). Presymptomatic SARS-CoV-2 infections and transmission in a skilled nursing facility. *N Engl J Med*, 382:2081–2090. doi: 10.1056/NEJMoa2008457.
- Ascierto, P. A., Fu, B., & Wei, H. (2021). IL-6 modulation for COVID-19: The right patients at the right time? *Journal for Immunotherapy of Cancer*, 9(4), e002285. <https://doi.org/10.1136/jitc-2020-002285>
- Atal, S., & Fatima, Z. (2020). IL-6 Inhibitors in the Treatment of Serious COVID-19: A Promising Therapy? *Pharmaceutical Medicine*, 34(4), 223–231. <https://doi.org/10.1007/s40290-020-00342-z>
- Awasthi, S., Wagner, T., Venkatakrishnan, A. J., Puranik, A., Hurchik, M., Agarwal, V., Conrad, I., Kirkup, C., Arunachalam, R., O'Horo, J., Kremers, W., Kashyap, R., Morice, W., Halamka, J., Williams, A. W., Faubion, W. A., Badley, A. D., Gores, G. J., & Soundararajan, V. (2021). Plasma IL-6 levels following corticosteroid therapy as an indicator of ICU length of stay in critically ill COVID-19 patients. *Cell Death Discovery*, 7(1), Article 1. <https://doi.org/10.1038/s41420-021-00429-9>
- Aziz, M., Fatima, R., Assaly, R. (2020). Elevated interleukin-6 and Severe COVID-19: a meta-analysis. *J Med Virol*. doi: 10.1002/jmv.25948.
- Bai, Y., Yao, L., Wei, T., Tian, F., Jin, DY., Chen, LJ. (2020). Presumed asymptomatic carrier transmission of COVID-19. *JAMA*, 323:1406–1407. doi: 10.1001/jama.2020.2565.
- Bardi, T., Pintado, V., Gomez-Rojo, M., Escudero-Sanchez, R., Azzam Lopez, A., Diez-Remesal, Y., Martinez Castro, N., Ruiz-Garbajosa, P., & Pestaña, D. (2021). Nosocomial infections associated to COVID-19 in the intensive

- care unit: Clinical characteristics and outcome. *European Journal of Clinical Microbiology & Infectious Diseases: Official Publication of the European Society of Clinical Microbiology*, 40(3), 495–502. <https://doi.org/10.1007/s10096-020-04142-w>
- Bhatti, J. M., Raza, S. A., Shahid, M. O., Akhtar, A., Ahmed, T., & Das, B. (2022). Association between glycemic control and the outcome in hospitalized patients with COVID-19. *Endocrine*, 77(2), 213–220. <https://doi.org/10.1007/s12020-022-03078-9>
- Beasley, R., Chien, J., Douglas, J., Eastlake, L., Farah, C., King, G., Moore, R., Pilcher, J., Richards, M., Smith, S., & Walters, H. (2015). Thoracic Society of Australia and New Zealand oxygen guidelines for acute oxygen use in adults: ‘Swimming between the flags.’ *Respirology*, 20(8), 1182–1191. <https://doi.org/10.1111/resp.12620>
- Bedel, C., Korkut, M., & Armağan, H. H. (2021). NLR, d-NLR and PLR can be affected by many factors. *International Immunopharmacology*, 90, 107154. <https://doi.org/10.1016/j.intimp.2020.107154>
- Beumer, M. C., Koch, R. M., van Beuningen, D., OudeLashof, A. M., van de Veerdonk, F. L., Kolwijck, E., van der Hoeven, J. G., Bergmans, D. C., & Hoedemaekers, C. W. E. (2019). Influenza virus and factors that are associated with ICU admission, pulmonary co-infections and ICU mortality. *Journal of Critical Care*, 50, 59–65. <https://doi.org/10.1016/j.jcrc.2018.11.013>
- Biran, N., Ip, A., Ahn, J., Go, R. C., Wang, S., Mathura, S., Sinclair, B. A., Bednarz, U., Marafelias, M., Hansen, E., Siegel, D. S., Goy, A. H., Pecora, A. L., Sawczuk, I. S., Koniaris, L. S., Simwenyi, M., Varga, D. W., Tank, L. K., Stein, A. A., ... Goldberg, S. L. (2020). Tocilizumab among patients with COVID-19 in the intensive care unit: A multicentre observational study. *The Lancet Rheumatology*, 2(10), e603–e612. [https://doi.org/10.1016/S2665-9913\(20\)30277-0](https://doi.org/10.1016/S2665-9913(20)30277-0)
- Bohn, MK., Hall, A., Sepiashvili, L., Jung, B., Steele, S., Adeli, K. (2020). Pathophysiology of COVID-19: Mechanisms underlying disease severity and progression. *American Physiological Society*, 35:288–301.
- Broman, N., Feuth, T., Vuorinen, T., Valtonen, M., Hohenthal, U., Löyttyniemi, E., Hirvioja, T., Jalava-Karvinen, P., Marttila, H., Nordberg, M., & Oksi, J. (2022). Early administration of tocilizumab in hospitalized COVID-19 patients with elevated inflammatory markers; COVIDSTORM—a prospective, randomized, single-centre, open-label study. *Clinical Microbiology and Infection*, 28(6), 844–851. <https://doi.org/10.1016/j.cmi.2022.02.027>
- Burhan, E., Susanto, A. D., Nasution, S. A., Ginanjar, E., Pitoyo, W., Susilo, A., Firdaus, I., Santoso, A., Arifa, D., Arif, S. K., Syam, F., Rasmin, M., Rengganis, I., Sukrisman, L., Wiyono, W. H., Isbaniah, F., Elhidsi, M., Aniwidyaningsih, W., Handayani, D., ... Dharmawan, I. (2022). *Perhimpunan Dokter Paru Indonesia (PDPI) Perhimpunan Dokter Spesialis Kardiovaskular Indonesia (PERKI) Perhimpunan Dokter*

Spesialis Penyakit Dalam Indonesia (PAPDI) Perhimpunan Dokter Anestesiologi dan Terapi Intensif Indonesia.

- Cajanding, R. (2022). Oxygen use and saturation targets in patients with COVID-19: Are we giving too much or aiming too low? *Nursing in Critical Care*, 27(2), 282–285. <https://doi.org/10.1111/nicc.12709>
- Camilla, R., Mirjam, S., Peter, S., Gisela, B., Guenter, F., Claudia, W., Thorbjörn, Z., Verena, T., Christian, J., Wolfgang, G., Michael, S., Christian, D., Patrick, V., Katrin, Z., Sabine, Z., Roman, W., Michael, H. (2020). Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany. *New England Journal of Medicine*, 382(10):970–971. doi: 10.1056/NEJMc2001468.
- Campochiaro, C., Della-Torre, E., Cavalli, G., De Luca, G., Ripa, M., Boffini, N., Tomelleri, A., Baldissera, E., Rovere-Querini, P., Ruggeri, A., Monti, G., De Cobelli, F., Zangrillo, A., Tresoldi, M., Castagna, A., & Dagna, L. (2020). Efficacy and safety of tocilizumab in severe COVID-19 patients: A single-centre retrospective cohort study. *European Journal of Internal Medicine*, 76, 43–49. <https://doi.org/10.1016/j.ejim.2020.05.021>
- Camporota, L., Vasques, F., Sanderson, B., Barrett, N. A., & Gattinoni, L. (2020). Identification of pathophysiological patterns for triage and respiratory support in COVID-19. *The Lancet. Respiratory Medicine*, 8(8), 752–754. [https://doi.org/10.1016/S2213-2600\(20\)30279-4](https://doi.org/10.1016/S2213-2600(20)30279-4)
- Ciceri, F., Beretta, L., Scandroglio, A. M., Colombo, S., Landoni, G., Ruggeri, A., Peccatori, J., D'Angelo, A., De Cobelli, F., Rovere-Querini, P., Tresoldi, M., Dagna, L., & Zangrillo, A. (2020). Microvascular COVID-19 lung vessels obstructive thromboinflammatory syndrome (MicroCLOTS): An atypical acute respiratory distress syndrome working hypothesis. *Critical Care and Resuscitation: Journal of the Australasian Academy of Critical Care Medicine*, 22(2), 95–97.
- Capes, S. E., Hunt, D., Malmberg, K., & Gerstein, H. C. (2000). Stress hyperglycaemia and increased risk of death after myocardial infarction in patients with and without diabetes: A systematic overview. *Lancet (London, England)*, 355(9206), 773–778. [https://doi.org/10.1016/S0140-6736\(99\)08415-9](https://doi.org/10.1016/S0140-6736(99)08415-9)
- Caricchio, R., Gallucci, M., Dass, C., Zhang, X., Gallucci, S., Fleece, D., Bromberg, M., Criner, G. J., & Temple University COVID-19 Research Group. (2021). Preliminary predictive criteria for COVID-19 cytokine storm. *Annals of the Rheumatic Diseases*, 80(1), 88–95. <https://doi.org/10.1136/annrheumdis-2020-218323>
- Cascella, M., Rajnik, M., Aleem, A. (2022). Features, Evaluation, and Treatment of Coronavirus (COVID-19) [Updated 2022 Jun 30]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK554776/>.
- Catanzaro, M., Fagiani, F., Racchi, M., Corsini, E., Govoni, S., & Lanni, C. (2020). Immune response in COVID-19: Addressing a pharmacological challenge by targeting pathways triggered by SARS-CoV-2. *Signal*

- Transduction and Targeted Therapy*, 5(1), 84.
<https://doi.org/10.1038/s41392-020-0191-1>
- Chai, X., Hu, L., Zhang, Y., Han, W., Lu, Z., Ke, A., Zhou, J., Shi, G., Fang, N., Fan, J., Cai, J., Fan, J., & Lan, F. (2020). *Specific ACE2 Expression in Cholangiocytes May Cause Liver Damage After 2019-nCoV Infection* (p. 2020.02.03.931766). bioRxiv. <https://doi.org/10.1101/2020.02.03.931766>
- Chams, N., Chams, S., Badran, R., Shams, A., Araj, A., Raad, M., Mukhopadhyay, S., Stroberg, E., Duval, EJ., Barton, LM., Hajj Hussein, I. (2020). COVID-19: A Multidisciplinary Review. *Public Health*, 8:383. doi: 10.3389/fpubh.2020.00383
- Chan, JF., Kok, KH., Zhu, Z., Chu, H., To, KK., Yuan, S., Yuen, KY. (2020). Genomic characterization of the 2019 novel human-pathogenic coronavirus isolated from a patient with atypical pneumonia after visiting Wuhan. *Emerg Microbes Infect*, 9(1):221-236.
- Chebib, N., Nesme, P., Freymond, N., Argaud, L., Rimmelé, T., Bohé, J., Devouassoux, G., Souquet, P.-J., & Guérin, C. (2019). Acute Respiratory Failure in Obesity-Hypoventilation Syndrome Managed in the ICU. *Respiratory Care*, 64(12), 1545–1554. <https://doi.org/10.4187/respcare.06901>
- Chen, N., Zhou, M., Dong, X., Qu, J., Gong, F., Han, Y., Qiu, Y., Wang, J., Liu, Y., Wei, Y., Xia, J., Yu, T., Zhang, X., Zhang, L. (2020). Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *Lancet*, 395:507–513. doi: 10.1016/S0140-6736(20)30211-7.
- Chen, R., Sang, L., Jiang, M., Yang, Z., Jia, N., Fu, W., Xie, J., Guan, W., Liang, W., Ni, Z., Hu, Y., Liu, L., Shan, H., Lei, C., Peng, Y., Wei, L., Liu, Y., Hu, Y., Peng, P., ... Zhong, N. (2020). Longitudinal hematologic and immunologic variations associated with the progression of COVID-19 patients in China. *Journal of Allergy and Clinical Immunology*, 146(1), 89–100. <https://doi.org/10.1016/j.jaci.2020.05.003>
- Chen, J., Qi, T., Liu, L., Ling, Y., Qian, Z., Li, T., Li, F., Xu, Q., Zhang, Y., Xu, S., Song, Z., Zeng, Y., Shen, Y., Shi, Y., Zhu, T., & Lu, H. (2020). Clinical progression of patients with COVID-19 in Shanghai, China. *Journal of Infection*, 80(5), e1–e6. <https://doi.org/10.1016/j.jinf.2020.03.004>
- Cheng, ZJ., Shan, J. (2020). 2019 novel coronavirus: where we are and what we know. *Infection*, 1–9. doi: 10.1007/s15010-020-01401-y.
- Cheung, N. W. (2016). Steroid-induced hyperglycaemia in hospitalised patients: Does it matter? *Diabetologia*, 59(12), 2507–2509. <https://doi.org/10.1007/s00125-016-4116-z>
- Cheung, T. M. T., Yam, L. Y. C., So, L. K. Y., Lau, A. C. W., Poon, E., Kong, B. M. H., & Yung, R. W. H. (2004). Effectiveness of noninvasive positive pressure ventilation in the treatment of acute respiratory failure in severe acute respiratory syndrome. *Chest*, 126(3), 845–850. <https://doi.org/10.1378/chest.126.3.845>

- Coomes, E. A., & Haghbayan, H. (2020). Interleukin-6 in Covid-19: A systematic review and meta-analysis. *Reviews in Medical Virology*, 30(6), 1–9. <https://doi.org/10.1002/rmv.2141>
- Coopersmith, CM., Antonelli, M., Bauer, SR., Deutschman, CS., Evans, LE., Ferrer, R., Hellman, J., Jog, S., Kesecioglu, J., Kissoon, N., Martin-Loeches, I., Nunnally, ME., Prescott, HC., Rhodes, A., Talmor, D., Tissieres, P., De Backer, D. (2021). The Surviving Sepsis Campaign: Research Priorities for Coronavirus Disease 2019 in Critical Illness. *Crit Care Med*, 49(4):598-622.
- Coppelli, A., Giannarelli, R., Aragona, M., Penno, G., Falcone, M., Tiseo, G., Ghiadoni, L., Barbieri, G., Monzani, F., Virdis, A., Menichetti, F., Del Prato, S., & Pisa COVID-19 Study Group. (2020). Hyperglycemia at Hospital Admission Is Associated With Severity of the Prognosis in Patients Hospitalized for COVID-19: The Pisa COVID-19 Study. *Diabetes Care*, 43(10), 2345–2348. <https://doi.org/10.2337/dc20-1380>
- Cortegiani, A., Ippolito, M., Greco, M., Granone, V., Protti, A., Gregoretti, C., Giarratano, A., Einav, S., Cecconi, M. (2021). Rationale and evidence on the use of tocilizumab in COVID-19: a systematic review. *Pulmonology*, 27(1):52-66. <https://doi.org/10.1016/j.pulmoe.2020.07.003>.
- Da, B. L., Kushner, T., El Halabi, M., Paka, P., Khalid, M., Uberoi, A., Lee, B. T., Perumalswami, P. V., Rutledge, S. M., Schiano, T. D., Friedman, S. L., & Saberi, B. (2021). Liver Injury in Patients Hospitalized with Coronavirus Disease 2019 Correlates with Hyperinflammatory Response and Elevated Interleukin-6. *Hepatology Communications*, 5(2), 177–188. <https://doi.org/10.1002/hep4.1631>
- Dahlan, S. (2020). Statistik untuk Kedokteran dan Kesehatan (Deskriptif, Bivariat, dan Multivariat Dilengkapi Aplikasi Menggunakan SPSS). PT Epidemiologi Indonesia. Jakarta.
- Darif, D., Hammi, I., Kihel, A., El Idrissi Saik, I., Guessous, F., & Akarid, K. (2021). The pro-inflammatory cytokines in COVID-19 pathogenesis: What goes wrong? *Microbial Pathogenesis*, 153, 104799. <https://doi.org/10.1016/j.micpath.2021.104799>
- D’Ardes, D., Boccattoda, A., Rossi, I., Guagnano, M. T., Santilli, F., Cipollone, F., & Bucci, M. (2020). COVID-19 and RAS: Unravelling an Unclear Relationship. *International Journal of Molecular Sciences*, 21(8), Article 8. <https://doi.org/10.3390/ijms21083003>
- de Abajo, FJ., Rodríguez-Martín, S., Lerma, V., Mejía-Abril, G., Aguilar, M., García-Luque, A., Laredo, L., Laosa, O., Centeno-Soto, GA., Ángeles Gálvez, M., Puerro, M., González-Rojano, E., Pedraza, L., de Pablo, I., Abad-Santos, F., Rodríguez-Mañas, L., Gil, M., Tobías, A., Rodríguez-Miguel, A., Rodríguez-Puyol, D. (2020). Use of renin-angiotensin-aldosterone system inhibitors and risk of COVID-19 requiring admission to hospital: a case-population study. *Lancet*, 395(10238):1705-1714.
- De Rossi, N., Scarpazza, C., Filippini, C., Cordioli, C., Rasia, S., Mancinelli, C. R., Rizzoni, D., Romanelli, G., Cossi, S., Vettoretto, N., Bove, S., Manfredini, S., Beindorf, E. A., Mosca, C., Scipione, V., Flamminio, G.,

- Albini, E. A., Giansiracusa, P., Capra, R., & Montichiari COVID-19 Study Group. (2020). Early use of low dose tocilizumab in patients with COVID-19: A retrospective cohort study with a complete follow-up. *EClinicalMedicine*, 25, 100459. <https://doi.org/10.1016/j.eclinm.2020.100459>
- Drăgoescu, A., Pădureanu, V., Stanculescu, A., Chiuțu, L., Tomescu, P., Geomăneanu, C., Padureanu, R., Iovănescu, V., Ungureanu, B., Pănuș, A., & Drăgoescu, O. (2021). Neutrophil to Lymphocyte Ratio (NLR)—A Useful Tool for the Prognosis of Sepsis in the ICU. *Biomedicines*, 10, 75. <https://doi.org/10.3390/biomedicines10010075>
- Effenberger, M., Grander, C., Grabherr, F., Griesmacher, A., Ploner, T., Hartig, F., Bellmann-Weiler, R., Joannidis, M., Zoller, H., Weiss, G., Adolph, T. E., & Tilg, H. (2021). Systemic inflammation as fuel for acute liver injury in COVID-19. *Digestive and Liver Disease*, 53(2), 158–165. <https://doi.org/10.1016/j.dld.2020.08.004>
- 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. *Intensive Care Medicine*, 47(11), 1181–1247. <https://doi.org/10.1007/s00134-021-06506-y>
- Fadini, G. P., Morieri, M. L., Longato, E., & Avogaro, A. (2020). Prevalence and impact of diabetes among people infected with SARS-CoV-2. *Journal of Endocrinological Investigation*, 43(6), 867–869. <https://doi.org/10.1007/s40618-020-01236-2>
- Felton, T., Chadwick, D., Rege, K., Fegan, C., Chappell, LC., Faust, SN., Jaki, T., Jeffery, K., Montgomery, A., Rowan, K., Juszczak, E., Baillie, JK, Haynes, R., Landray, MJ. (2021). Dexamethasone in Hospitalized Patients with Covid-19. *N Engl J Med*, 384(8):693-704.
- Fichtner, F., Moerer, O., Laudi, S., Weber-Carstens, S., Nothacker, M., Kaisers, U., & Investigators and the Guideline Group on Mechanical Ventilation and Extracorporeal Membrane Oxygenation in Acute Respiratory Insufficiency. (2018). Mechanical Ventilation and Extracorporeal Membrane Oxygenation in Acute Respiratory Insufficiency. *Deutsches Arzteblatt International*, 115(50), 840–847. <https://doi.org/10.3238/arztebl.2018.0840>
- Fignani, D., Licata, G., Brusco, N., Nigi, L., Grieco, G. E., Marselli, L., Overbergh, L., Gysemans, C., Colli, M. L., Marchetti, P., Mathieu, C., Eizirik, D. L., Sebastiani, G., & Dotta, F. (2020). SARS-CoV-2 Receptor Angiotensin I-Converting Enzyme Type 2 (ACE2) Is Expressed in Human Pancreatic β -Cells and in the Human Pancreas Microvasculature. *Frontiers in Endocrinology*, 11, 596898. <https://doi.org/10.3389/fendo.2020.596898>
- Fong, A. C., & Cheung, N. W. (2013). The high incidence of steroid-induced hyperglycaemia in hospital. *Diabetes Research and Clinical Practice*, 99(3), 277–280. <https://doi.org/10.1016/j.diabres.2012.12.023>

- Forrest, I. S., Jaladanki, S. K., Paranjpe, I., Glicksberg, B. S., Nadkarni, G. N., & Do, R. (2021). Non-invasive ventilation versus mechanical ventilation in hypoxemic patients with COVID-19. *Infection*, 49(5), 989–997. <https://doi.org/10.1007/s15010-021-01633-6>
- Frater, J. L., Zini, G., d’Onofrio, G., & Rogers, H. J. (2020). COVID-19 and the clinical hematology laboratory. *International Journal of Laboratory Hematology*, 42(S1), 11–18. <https://doi.org/10.1111/ijlh.13229>
- Fu, B., Xu, X., & Wei, H. (2020). Why tocilizumab could be an effective treatment for severe COVID-19? *Journal of Translational Medicine*, 18(1), 164. <https://doi.org/10.1186/s12967-020-02339-3>
- Fu, L., Wang, B., Yuan, T., Chen, X., Ao, Y., Fitzpatrick, T. (2020). Clinical characteristics of coronavirus disease 2019 (COVID-19) in China: a systematic review and meta-analysis. *J Infect*, 80:656–5. doi: 10.1016/j.jinf.2020.03.041.
- Galwankar, S. C., Paladino, L., Gaieski, D. F., Nanayakkara, K. D. P. W. B., Somma, S. D., Grover, J., & Stawicki, S. P. (2020). Management Algorithm for Subclinical Hypoxemia in Coronavirus Disease-2019 Patients: Intercepting the “Silent Killer.” *Journal of Emergencies, Trauma, and Shock*, 13(2), 110. https://doi.org/10.4103/JETS.JETS_72_20
- Gandhi, RT., Lynch, JB., Del Rio, C. (2020). Mild or Moderate Covid-19. *N Engl J Med*, 383(18):1757-1766.
- Gao, Q., Yin, X., Tan, B., Wang, J., Chen, J., Zhao, B., Yang, Q., & Li, Z. (2022). Drug-induced liver injury following the use of tocilizumab or sarilumab in patients with coronavirus disease 2019. *BMC Infectious Diseases*, 22, 929. <https://doi.org/10.1186/s12879-022-07896-0>
- Gao, Y., Li, T., Han, M. (2020). Diagnostic utility of clinical laboratory data determinations for patients with the severe COVID-19. *J Med Virol*. doi: 10.1002/jmv.25770.
- Garg, S., Kim, L., Whitaker, M., O’Halloran, A., Cummings, C., Holstein, R., Prill, M., Chai, S. J., Kirley, P. D., Alden, N. B., Kawasaki, B., Yousey-Hindes, K., Niccolai, L., Anderson, E. J., Openo, K. P., Weigel, A., Monroe, M. L., Ryan, P., Henderson, J., ... Fry, A. (2020). Hospitalization Rates and Characteristics of Patients Hospitalized with Laboratory-Confirmed Coronavirus Disease 2019—COVID-NET, 14 States, March 1–30, 2020. *Morbidity and Mortality Weekly Report*, 69(15), 458–464. <https://doi.org/10.15585/mmwr.mm6915e3>
- Gattinoni, L., Marini, J. J., Pesenti, A., Quintel, M., Mancebo, J., & Brochard, L. (2016). The “baby lung” became an adult. *Intensive Care Medicine*, 42(5), 663–673. <https://doi.org/10.1007/s00134-015-4200-8>
- Gebhard, C., Regitz-Zagrosek, V., Neuhauser, HK., Morgan, R., Klein, SL. (2020). Impact of sex and gender on COVID-19 outcomes in Europe. *Biol Sex Differ*, 11:29.
- Giacomelli, A., Pezzati, L., Conti, F., Bernacchia, D., Siano, M., Oreni, L. (2020). Self-reported olfactory and taste disorders in SARS-CoV-2 patients: a cross-sectional study. *Clin Infect Dis*. doi: 10.1093/cid/ciaa330.

- Grasselli, G., Cattaneo, E., & Florio, G. (2021). Secondary infections in critically ill patients with COVID-19. *Critical Care*, 25, 317. <https://doi.org/10.1186/s13054-021-03672-9>
- Grifoni, E., Valoriani, A., Cei, F., Lamanna, R., Gelli, AMG., Ciambotti, B., Vannucchi, V., Moroni, F., Pelagatti, L., Tarquini, R., Landini, G., Vanni, S., Masotti, L. (2020). Interleukin-6 as prognosticator in patients with COVID-19. *J Infect*, 81(3):452-482. doi: 10.1016/j.jinf.2020.06.008.
- Guan, W., Ni, Z., Hu, Y., Liang, W., Ou, C., He, J., Liu, L., Shan, H., Lei, C., Hui, D. S. C., Du, B., Li, L., Zeng, G., Yuen, K.-Y., Chen, R., Tang, C., Wang, T., Chen, P., Xiang, J., ... Zhong, N. (2020). Clinical Characteristics of Coronavirus Disease 2019 in China. *New England Journal of Medicine*, 382(18), 1708–1720. <https://doi.org/10.1056/NEJMoa2002032>
- Guirao, JJ., Cabrera, CM., Jiménez, N., Rincón, L., Urra, JM. (2020). High serum IL-6 values increase the risk of mortality and the severity of pneumonia in patients diagnosed with COVID-19. *Mol Immunol*, 128:64-68. doi: 10.1016/j.molimm.2020.10.006.
- Gupta, G. S. (2022). The Lactate and the Lactate Dehydrogenase in Inflammatory Diseases and Major Risk Factors in COVID-19 Patients. *Inflammation*, 45(6), 2091–2123. <https://doi.org/10.1007/s10753-022-01680-7>
- Hartog, N. L., Davis, A. T., Prokop, J. W., Walls, A., & Rajasekaran, S. (2021). Monitoring neutrophil-to-lymphocyte ratio in patients with coronavirus disease 2019 receiving tocilizumab. *Annals of Allergy, Asthma & Immunology*, 126(3), 306–308. <https://doi.org/10.1016/j.anai.2020.12.014>
- Haryati, H., Arganita, F. R., & Ramadhaniati, W. (2021). Tocilizumab In Severe To Critical Confirmed COVID-19: A Case Series At Ulin Referral Hospital Of South Kalimantan. *Jurnal Profesi Medika : Jurnal Kedokteran Dan Kesehatan*, 15(1), Article 1. <https://doi.org/10.33533/jpm.v15i1.2862>
- Hashem, MK., Khedr, EM., Daef, E., Mohamed-Hussein, A., Mostafa, EF., Hassany, SM., Galal, H., Hassan, SA., Galal, I., Amin, MT., & Hassan, HM. (2021). Prognostic biomarkers in COVID-19 infection: value of anemia, neutrophil-to-lymphocyte ratio, platelet-to-lymphocyte ratio, and D-dimer. *The Egyptian Journal of Bronchology*, 15(1):1–9. <https://doi.org/10.1186/S43168-021-00075-W>.
- Hermine, O., Mariette, X., Tharaux, P.-L., Resche-Rigon, M., Porcher, R., Ravaud, P., & CORIMUNO-19 Collaborative Group. (2021). Effect of Tocilizumab vs Usual Care in Adults Hospitalized With COVID-19 and Moderate or Severe Pneumonia: A Randomized Clinical Trial. *JAMA Internal Medicine*, 181(1), 32–40. <https://doi.org/10.1001/jamainternmed.2020.6820>
- Herold, T., Jurinovic, V., Arnreich, C. (2020). Elevated levels of interleukin-6 and CRP predict the need for mechanical ventilation in COVID-19. *J Allergy Clin Immunol*. doi: 10.1016/j.jaci.2020.05.008.
- Hoffmann, M., Kleine-Weber, H., Schroeder, S., Krüger, N., Herrler, T., Erichsen, S., Schiergens, TS., Herrler, G., Wu, NH., Nitsche, A., Müller, MA., Drosten, C., Pöhlmann, S. (2020). SARS-CoV-2 Cell Entry Depends on

- ACE2 and TMPRSS2 and Is Blocked by a Clinically Proven Protease Inhibitor. *Cell*, 181(2):271-280.
- Horby, P., Lim, W. S., Emberson, J., Mafham, M., Bell, J., Linsell, L., Staplin, N., Brightling, C., Ustianowski, A., Elmahi, E., Prudon, B., Green, C., Felton, T., Chadwick, D., Rege, K., Fegan, C., Chappell, L. C., Faust, S. N., Jaki, T., ... Group, R. C. (2020). *Effect of Dexamethasone in Hospitalized Patients with COVID-19 – Preliminary Report* (p. 2020.06.22.20137273). medRxiv. <https://doi.org/10.1101/2020.06.22.20137273>
- Huang, E., Isonaka, S., Yang, H., Salce, E., Rosales, E., & Jordan, S. C. (2021). Tocilizumab treatment in critically ill patients with COVID-19: A retrospective observational study. *International Journal of Infectious Diseases*, 105, 245–251. <https://doi.org/10.1016/j.ijid.2021.02.057>
- Huang, I., Pranata, R., Lim, M. A., Oehadian, A., & Alisjahbana, B. (2020). C-reactive protein, procalcitonin, D-dimer, and ferritin in severe coronavirus disease-2019: A meta-analysis. *Therapeutic Advances in Respiratory Disease*, 14, 1753466620937175. <https://doi.org/10.1177/1753466620937175>
- Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., Gu, X., Cheng, Z., Yu, T., Xia, J., Wei, Y., Wu, W., Xie, X., Yin, W., Li, H., Liu, M., ... Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet (London, England)*, 395(10223), 497–506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- Huang, I., Lim, M. A., & Pranata, R. (2020). Diabetes mellitus is associated with increased mortality and severity of disease in COVID-19 pneumonia—A systematic review, meta-analysis, and meta-regression. *Diabetes & Metabolic Syndrome*, 14(4), 395–403. <https://doi.org/10.1016/j.dsx.2020.04.018>
- Huertas, A., Montani, D., Savale, L., Pichon, J., Tu, L., Parent, F., Guignabert, C., & Humbert, M. (2020). Endothelial cell dysfunction: A major player in SARS-CoV-2 infection (COVID-19)? *European Respiratory Journal*, 56(1). <https://doi.org/10.1183/13993003.01634-2020>
- Hussain, M., Babar, M. Z. M., Akhtar, L., & Hussain, M. S. (2017). Neutrophil lymphocyte ratio (NLR): A well assessment tool of glycemic control in type 2 diabetic patients. *Pakistan Journal of Medical Sciences*, 33(6), 1366. <https://doi.org/10.12669/pjms.336.12900>
- Jiang, S., Hillyer, C., Du, L. (2020). Neutralizing Antibodies against SARS-CoV-2 and Other Human Coronaviruses. *Trends in Immunology*, 41(6), 355-359.
- Jin, JM., Bai, P., He, W., Wu, F., Liu, XF., Han, DM., Liu, S., Yang, JK. (2020). Gender Differences in Patients With COVID-19: Focus on Severity and Mortality. *Front Public Health*, 8:152.
- Kampf, G., Todt, D., Pfaender, S., Steinmann, E. (2020). Persistence of coronaviruses on inanimate surfaces and its inactivation with biocidal agents. *J Hosp Infect*, 6701(20):30046.
- Khalil, RH., Al-Humadi, N. (2020). Types of acute phase reactants and their importance in vaccination. *Biomedical Reports*, 12(4):143–152.

- Kardos, Z., Szabó, M., Baráth, Z., Miksi, Á., Oláh, C., Kozma, Á., Gergely, J. A., Csányi, E., & Szekanecz, Z. (2023). Tocilizumab in Combination with Corticosteroids in COVID-19 Pneumonia: A Single-Centre Retrospective Controlled Study. *Biomedicines*, *11*(2), 349. <https://doi.org/10.3390/biomedicines11020349>
- Karimi, A., Shobeiri, P., Kulasinghe, A., & Rezaei, N. (2021). Novel Systemic Inflammation Markers to Predict COVID-19 Prognosis. *Frontiers in Immunology*, *12*, 741061. <https://doi.org/10.3389/fimmu.2021.741061>
- Kewan, T., Covut, F., Al-Jaghbeer, M. J., Rose, L., Gopalakrishna, K. V., & Akbik, B. (2020). Tocilizumab for treatment of patients with severe COVID-19: A retrospective cohort study. *EClinicalMedicine*, *24*. <https://doi.org/10.1016/j.eclinm.2020.100418>
- Keykavousi, K., Nourbakhsh, F., Abdollahpour, N., Fazeli, F., Sedaghat, A., Soheili, V., & Sahebkar, A. (2022). A Review of Routine Laboratory Biomarkers for the Detection of Severe COVID-19 Disease. *International Journal of Analytical Chemistry*, 2022. <https://doi.org/10.1155/2022/9006487>
- Khalid, A., Ali Jaffar, M., Khan, T., Abbas Lail, R., Ali, S., Aktas, G., Waris, A., Javaid, A., Ijaz, N., & Muhammad, N. (2021). Hematological and biochemical parameters as diagnostic and prognostic markers in SARS-COV-2 infected patients of Pakistan: A retrospective comparative analysis. *Hematology*, *26*(1), 529–542. <https://doi.org/10.1080/16078454.2021.1950898>
- Khunti, K., Del Prato, S., Mathieu, C., Kahn, S. E., Gabbay, R. A., & Buse, J. B. (2021). COVID-19, Hyperglycemia, and New-Onset Diabetes. *Diabetes Care*, *44*(12), 2645–2655. <https://doi.org/10.2337/dc21-1318>
- Korayem, G. B., Aljuhani, O., Altebainawi, A. F., Shaya, A. I. A., Alnajjar, L. I., Alissa, A., Aldhaeefi, M., Kensara, R., Al Muqati, H., Alhuwahmel, A., Alhuthaili, O., Vishwakarma, R., Aldardeer, N., Eljaaly, K., Alharbi, A., Harbi, S. A., Katheri, A. A., Bekairy, A. M. A., Aljedai, A., & Al Sulaiman, K. (2022). The safety and effectiveness of tocilizumab in older adult critically ill patients with COVID-19: A multicenter, cohort study. *International Journal of Infectious Diseases*, *122*, 252–259. <https://doi.org/10.1016/j.ijid.2022.05.038>
- Kordzadeh-Kermani, E., Khalili, H., & Karimzadeh, I. (2020). Pathogenesis, clinical manifestations and complications of coronavirus disease 2019 (COVID-19). *Future Microbiology*, *15*, 1287–1305. <https://doi.org/10.2217/fmb-2020-0110>
- Kotak, S., Khatri, M., Malik, M., Malik, M., Hassan, W., Amjad, A., Malik, F., Hassan, H., Ahmed, J., & Zafar, M. (2020). Use of Tocilizumab in COVID-19: A Systematic Review and Meta-Analysis of Current Evidence. *Cureus*, *12*(10), e10869. <https://doi.org/10.7759/cureus.10869>
- Kox, M., Waalders, N. J. B., Kooistra, E. J., Gerretsen, J., & Pickkers, P. (2020). Cytokine Levels in Critically Ill Patients With COVID-19 and Other Conditions. *JAMA*, *324*(15), 1565–1567. <https://doi.org/10.1001/jama.2020.17052>

- Kuikel, S., Pathak, N., Poudel, S., Thapa, S., Bhattarai, S. L., Chaudhary, G., & Pandey, K. R. (2022). Neutrophil-lymphocyte ratio as a predictor of adverse outcome in patients with community-acquired pneumonia: A systematic review. *Health Science Reports*, 5(3), e630. <https://doi.org/10.1002/hsr2.630>
- Lau, E. S., McNeill, J. N., Paniagua, S. M., Liu, E. E., Wang, J. K., Bassett, I. V., Selvaggi, C. A., Lubitz, S. A., Foulkes, A. S., & Ho, J. E. (2021). Sex differences in inflammatory markers in patients hospitalized with COVID-19 infection: Insights from the MGH COVID-19 patient registry. *PLoS ONE*, 16(4), e0250774. <https://doi.org/10.1371/journal.pone.0250774>
- Le, V. T., Ha, Q. H., Tran, M. T., Le, N. T., Le, V. T., & Le, M. K. (2022). Hyperglycemia in Severe and Critical COVID-19 Patients: Risk Factors and Outcomes. *Cureus*, 14(8), e27611. <https://doi.org/10.7759/cureus.27611>
- Lei, J., Kusov, Y., Hilgenfeld, R. (2018). Nsp3 of coronaviruses: Structures and functions of a large multi-domain protein. *Antiviral Res*, 149:58-74.
- Lemeshow, S., Hosmer Jr, D. W., Klar, J., & Lwanga, S. K. (1990). *Adequacy of Sample Size in Health Studies*. World Health Organization. <https://apps.who.int/iris/handle/10665/41607>
- Leulseged, T. W., Hassen, I. S., Edo, M. G., Abebe, D. S., Maru, E. H., Zewde, W. C., Chamiso, N. W., & Jagema, T. B. (2021). Duration of Supplemental Oxygen Requirement and Predictors in Severe COVID-19 Patients in Ethiopia: A Survival Analysis. *Ethiopian Journal of Health Sciences*, 31(4), 699–708. <https://doi.org/10.4314/ejhs.v31i4.3>
- Li, H., Tian, S., Chen, T., Cui, Z., Shi, N., Zhong, X., Qiu, K., Zhang, J., Zeng, T., Chen, L., & Zheng, J. (2020). Newly diagnosed diabetes is associated with a higher risk of mortality than known diabetes in hospitalized patients with COVID-19. *Diabetes, Obesity & Metabolism*, 22(10), 1897–1906. <https://doi.org/10.1111/dom.14099>
- Li, Q., Guan, X., Wu, P., Wang, X., Zhou, L., Tong, Y. (2020). Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *N Engl J Med*, 382:1199–1207. doi: 10.1056/NEJMoa2001316.
- Li, X., Geng, M., Peng, Y., Meng, L., Lu, S. (2020). Molecular immune pathogenesis and diagnosis of COVID-19. *J Pharm Anal*, 10:102–8. doi: 10.1016/j.jpha.2020.03.001.
- Liang, P., & Yu, F. (2022). Value of CRP, PCT, and NLR in Prediction of Severity and Prognosis of Patients With Bloodstream Infections and Sepsis. *Frontiers in Surgery*, 9. <https://www.frontiersin.org/articles/10.3389/fsurg.2022.857218>
- Lim, P. C., Wong, K. L., Rajah, R., Chong, M. F., Chow, T. S., Subramaniam, S., & Lee, C. Y. (2022). Comparing the efficacy of tocilizumab with corticosteroid therapy in treating COVID-19 patients: A systematic review and meta-analysis. *DARU Journal of Pharmaceutical Sciences*, 30(1), 211–228. <https://doi.org/10.1007/s40199-021-00430-8>

- Lim, S. J., Choi, J. Y., Lee, S. J., Cho, Y. J., Jeong, Y. Y., Kim, H. C., Lee, J. D., & Hwang, Y. S. (2014). Intensive care unit-acquired blood stream infections: A 5-year retrospective analysis of a single tertiary care hospital in Korea. *Infection*, 42(5), 875–881. <https://doi.org/10.1007/s15010-014-0651-z>
- Liu, F., Li, L., Xu, M., Wu, J., Luo, D., Zhu, Y., Li, B., Song, X., & Zhou, X. (2020). Prognostic value of interleukin-6, C-reactive protein, and procalcitonin in patients with COVID-19. *Journal of Clinical Virology*, 127, 104370. <https://doi.org/10.1016/j.jcv.2020.104370>
- Liu, F., Long, X., Zhang, B., Zhang, W., Chen, X., & Zhang, Z. (2020). ACE2 Expression in Pancreas May Cause Pancreatic Damage After SARS-CoV-2 Infection. *Clinical Gastroenterology and Hepatology: The Official Clinical Practice Journal of the American Gastroenterological Association*, 18(9), 2128–2130.e2. <https://doi.org/10.1016/j.cgh.2020.04.040>
- Liu, T., Zhang, J., Yang, Y., Ma, H., Li, Z., Zhang, J., Cheng, J., Zhang, X., Zhao, Y., Xia, Z., Zhang, L., Wu, G., & Yi, J. (2020). The role of interleukin-6 in monitoring severe case of coronavirus disease 2019. *EMBO Molecular Medicine*, 12(7), e12421. <https://doi.org/10.15252/emmm.202012421>
- Liu, X., Zhu, X., Miao, Q., Ye, H., Zhang, Z., & Li, Y.-M. (2014). Hyperglycemia induced by glucocorticoids in nondiabetic patients: A meta-analysis. *Annals of Nutrition & Metabolism*, 65(4), 324–332. <https://doi.org/10.1159/000365892>
- López-Medrano, F., Pérez-Jacoiste Asín, M. A., Fernández-Ruiz, M., Carretero, O., Lalueza, A., Maestro de la Calle, G., Caro, J. M., de la Calle, C., Catalán, M., García-García, R., Martínez-López, J., Origüen, J., Ripoll, M., San Juan, R., Trujillo, H., Sevillano, Á., Gutiérrez, E., de Miguel, B., Aguilar, F., ... Aguado, J. M. (2021). Combination therapy with tocilizumab and corticosteroids for aged patients with severe COVID-19 pneumonia: A single-center retrospective study. *International Journal of Infectious Diseases*, 105, 487–494. <https://doi.org/10.1016/j.ijid.2021.02.099>
- Luo, P., Liu, Y., Qiu, L., Liu, X., Liu, D., & Li, J. (2020). Tocilizumab treatment in COVID-19: A single center experience. *Journal of Medical Virology*, 92(7), 814–818. <https://doi.org/10.1002/jmv.25801>
- Ma, A., Cheng, J., Yang, J., Dong, M., Liao, X., & Kang, Y. (2020). Neutrophil-to-lymphocyte ratio as a predictive biomarker for moderate-severe ARDS in severe COVID-19 patients. *Critical Care*, 24(1), 288. <https://doi.org/10.1186/s13054-020-03007-0>
- Mahamid, M., Paz, K., Reuven, M., & Safadi, R. (2011). Hepatotoxicity due to tocilizumab and anakinra in rheumatoid arthritis: Two case reports. *International Journal of General Medicine*, 4, 657–660. <https://doi.org/10.2147/IJGM.S23920>
- Majumdar, S. R., Eurich, D. T., Gamble, J.-M., Senthilselvan, A., & Marrie, T. J. (2011). Oxygen Saturations Less than 92% Are Associated with Major Adverse Events in Outpatients with Pneumonia: A Population-Based

- Cohort Study. *Clinical Infectious Diseases*, 52(3), 325–331. <https://doi.org/10.1093/cid/ciq076>
- Malik, M. I., Zafar, S. A. F., Qayyum, F., Malik, M., Asghar, M. S., Tahir, M. J., Arshad, A., Khalil, F., Naz, H. S., Aslam, M., Saleem, J., Aziz, A., Azhar, M. U., Naqash, M., & Yousaf, Z. (2022). Tocilizumab in severe COVID-19 – A randomized, double-blind, placebo-controlled trial. *Infectious Medicine*, 1(2), 88. <https://doi.org/10.1016/j.imj.2022.05.001>
- Mason, RJ. (2020). Pathogenesis of COVID-19 from a cell biology perspective. *Eur Respir J*, 55:2000607. doi: 10.1183/13993003.00607-2020.
- Mukherjee, S., Pahan, K. (2021). Is COVID-19 Gender-sensitive? *J Neuroimmune Pharmacol*, 16(1):38-47. doi: 10.1007/s11481-020-09974-z.
- Musuuzza, J. S., Watson, L., Parmasad, V., Putman-Buehler, N., Christensen, L., & Safdar, N. (2021). Prevalence and outcomes of co-infection and superinfection with SARS-CoV-2 and other pathogens: A systematic review and meta-analysis. *PloS One*, 16(5), e0251170. <https://doi.org/10.1371/journal.pone.0251170>
- Myers, L. C., Parodi, S. M., Escobar, G. J., & Liu, V. X. (2020). Characteristics of Hospitalized Adults With COVID-19 in an Integrated Health Care System in California. *JAMA*, 323(21), 2195–2198. <https://doi.org/10.1001/jama.2020.7202>
- Navas-Blanco, J. R., & Dudaryk, R. (2020). Management of Respiratory Distress Syndrome due to COVID-19 infection. *BMC Anesthesiology*, 20(1), 177. <https://doi.org/10.1186/s12871-020-01095-7>
- Nehring, SM., Goyal, A., Patel, BC. (2022). C Reactive Protein. [Updated 2022 Jul 18]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. <https://www.ncbi.nlm.nih.gov/books/NBK441843/>
- Notoatmodjo, S. (2005). Metode Penelitian Kesehatan. Rineka Cipta. Jakarta.
- Nishimoto, N., Terao, K., Mima, T., Nakahara, H., Takagi, N., & Kakehi, T. (2008). Mechanisms and pathologic significances in increase in serum interleukin-6 (IL-6) and soluble IL-6 receptor after administration of an anti-IL-6 receptor antibody, tocilizumab, in patients with rheumatoid arthritis and Castleman disease. *Blood*, 112(10), 3959–3964. <https://doi.org/10.1182/blood-2008-05-155846>
- O'Driscoll, B. R., Howard, L. S., Earis, J., & Mak, V. (2017). British Thoracic Society Guideline for oxygen use in adults in healthcare and emergency settings. *BMJ Open Respiratory Research*, 4(1), e000170. <https://doi.org/10.1136/bmjresp-2016-000170>
- P, M., Df, M., M, B., E, S., Rs, T., & Jj, M. (2020). COVID-19: Consider cytokine storm syndromes and immunosuppression. *Lancet (London, England)*, 395(10229). [https://doi.org/10.1016/S0140-6736\(20\)30628-0](https://doi.org/10.1016/S0140-6736(20)30628-0)
- Patak, L., Gawlinski, A., Fung, N.I., Doering, L., dan Berg, J. (2004). Patients' reports of health care practitioner interventions that are related to communication during mechanical ventilation. *Heart & Lung: The Journal of Acute and Critical Care*, 33: 308–320.
- Patel, SK., Velkoska, E., Burrell, LM. (2013). Emerging penandas in cardiovascular disease: where does angiotensin-converting enzyme 2 fit

- in? *Clin Exp Pharmacol Physiol*, 40:551–559. doi: 10.1111/1440-1681.12069.
- Pranata, R., Lim, M. A., Huang, I., Raharjo, S. B., & Lukito, A. A. (2020). Hypertension is associated with increased mortality and severity of disease in COVID-19 pneumonia: A systematic review, meta-analysis and meta-regression. *Journal of the Renin-Angiotensin-Aldosterone System: JRAAS*, 21(2), 1470320320926899. <https://doi.org/10.1177/1470320320926899>
- Prasad, K. (2006). C-reactive protein (CRP)-lowering agents. *Cardiovasc Drug Rev*, 24(1):33-50. doi: 10.1111/j.1527-3466.2006.00033.x.
- Qin, C., Zhou, L., Hu, Z., Zhang, S., Yang, S., Tao, Y., Xie, C., Ma, K., Shang, K., Wang, W., & Tian, D.-S. (2020). *Dysregulation of Immune Response in Patients with COVID-19 in Wuhan, China* (SSRN Scholarly Paper No. 3541136). <https://doi.org/10.2139/ssrn.3541136>
- Qin, L., Li, X., Shi, J., Yu, M., Wang, K., Tao, Y., Zhou, Y., Zhou, M., Xu, S., Wu, B., Yang, Z., Zhang, C., Yue, J., Cheng, C., Liu, X., & Xie, M. (2020). Gendered effects on inflammation reaction and outcome of COVID-19 patients in Wuhan. *Journal of Medical Virology*, 92(11), 2684–2692. <https://doi.org/10.1002/jmv.26137>
- Ragab, D., Salah Eldin, H., Taeimah, M., Khattab, R., & Salem, R. (2020). The COVID-19 Cytokine Storm; What We Know So Far. *Frontiers in Immunology*, 11. <https://www.frontiersin.org/articles/10.3389/fimmu.2020.01446>
- Ramiro, S., Mostard, R. L. M., Magro-Checa, C., van Dongen, C. M. P., Dormans, T., Buijs, J., Gronenschild, M., de Kruif, M. D., van Haren, E. H. J., van Kraaij, T., Leers, M. P. G., Peeters, R., Wong, D. R., & Landewé, R. B. M. (2020). Historically controlled comparison of glucocorticoids with or without tocilizumab versus supportive care only in patients with COVID-19-associated cytokine storm syndrome: Results of the CHIC study. *Annals of the Rheumatic Diseases*, 79(9), 1143–1151. <https://doi.org/10.1136/annrheumdis-2020-218479>
- RECOVERY Collaborative Group. (2021). Tocilizumab in patients admitted to hospital with COVID-19 (RECOVERY): A randomised, controlled, open-label, platform trial. *Lancet (London, England)*, 397(10285), 1637–1645. [https://doi.org/10.1016/S0140-6736\(21\)00676-0](https://doi.org/10.1016/S0140-6736(21)00676-0)
- Rice, T. W., Wheeler, A. P., Bernard, G. R., Hayden, D. L., Schoenfeld, D. A., Ware, L. B., & National Institutes of Health, National Heart, Lung, and Blood Institute ARDS Network. (2007). Comparison of the SpO₂/FIO₂ ratio and the PaO₂/FIO₂ ratio in patients with acute lung injury or ARDS. *Chest*, 132(2), 410–417. <https://doi.org/10.1378/chest.07-0617>
- Ritter, L. A., Britton, N., Heil, E. L., Teeter, W. A., Murthi, S. B., Chow, J. H., Ricotta, E., Chertow, D. S., Grazioli, A., & Levine, A. R. (2021). The Impact of Corticosteroids on Secondary Infection and Mortality in Critically Ill COVID-19 Patients. *Journal of Intensive Care Medicine*, 36(10), 1201–1208. <https://doi.org/10.1177/08850666211032175>
- Rochwerg, B., Brochard, L., Elliott, M. W., Hess, D., Hill, N. S., Nava, S., Navalesi, P., Antonelli, M., Brozek, J., Conti, G., Ferrer, M., Guntupalli,

- K., Jaber, S., Keenan, S., Mancebo, J., Mehta, S., & Raoof, S. (2017). Official ERS/ATS clinical practice guidelines: Noninvasive ventilation for acute respiratory failure. *The European Respiratory Journal*, 50(2), 1602426. <https://doi.org/10.1183/13993003.02426-2016>
- Rodríguez-Baño, J., Pachón, J., Carratalà, J., Ryan, P., Jarrín, I., Yllescas, M., Arribas, J. R., Berenguer, J., Aznar Muñoz, E., Gil Divasson, P., González Muñiz, P., Muñoz Aguirre, C., Díaz Menéndez, M., de la Calle Prieto, F., Arsuaga Vicente, M., Trigo Esteban, E., Pérez Valero, I., de Miguel Buckley, R., Cadiñanos Loidi, J., ... Ruiz Mesa, J. D. (2021). Treatment with tocilizumab or corticosteroids for COVID-19 patients with hyperinflammatory state: A multicentre cohort study (SAM-COVID-19). *Clinical Microbiology and Infection*, 27(2), 244–252. <https://doi.org/10.1016/j.cmi.2020.08.010>
- Rodriguez-Morales, A. J., Cardona-Ospina, J. A., Gutiérrez-Ocampo, E., Villamizar-Peña, R., Holguin-Rivera, Y., Escalera-Antezana, J. P., Alvarado-Arnez, L. E., Bonilla-Aldana, D. K., Franco-Paredes, C., Henao-Martinez, A. F., Paniz-Mondolfi, A., Lagos-Grisales, G. J., Ramírez-Vallejo, E., Suárez, J. A., Zambrano, L. I., Villamil-Gómez, W. E., Balbin-Ramon, G. J., Rabaan, A. A., Harapan, H., ... Sah, R. (2020). Clinical, laboratory and imaging features of COVID-19: A systematic review and meta-analysis. *Travel Medicine and Infectious Disease*, 34, 101623. <https://doi.org/10.1016/j.tmaid.2020.101623>
- Romano, SD., Blackstock, AJ., Taylor, EV., El Burai Felix, S., Adjei, S., Singleton, CM., Fuld, J., Bruce, BB., Boehmer, TK. (2021). Trends in Racial and Ethnic Disparities in COVID-19 Hospitalizations, by Region - United States, March-December 2020. *MMWR Morb Mortal Wkly Rep*, 70(15):560-565.
- Root-Bernstein, R. (2021). Innate Receptor Activation Patterns Involving TLR and NLR Synergisms in COVID-19, ALI/ARDS and Sepsis Cytokine Storms: A Review and Model Making Novel Predictions and Therapeutic Suggestions. *International Journal of Molecular Sciences*, 22(4), 2108. <https://doi.org/10.3390/ijms22042108>
- Rosas, I. O., Bräu, N., Waters, M., Go, R. C., Malhotra, A., Hunter, B. D., Bhagani, S., Skiest, D., Savic, S., Douglas, I. S., Garcia-Diaz, J., Aziz, M. S., Cooper, N., Youngstein, T., Sorbo, L. D., Zerda, D. J. D. L., Ustianowski, A., Gracian, A. C., Blyth, K. G., ... Bao, M. (2022). Tocilizumab in patients hospitalised with COVID-19 pneumonia: Efficacy, safety, viral clearance, and antibody response from a randomised controlled trial (COVACTA). *EClinicalMedicine*, 47, 101409. <https://doi.org/10.1016/j.eclinm.2022.101409>
- Saand, A. R., Flores, M., Kewan, T., Alqaisi, S., Alwakeel, M., Griffiths, L., Wang, X., Han, X., Burton, R., Al-Jaghbeer, M. J., & Abi Fadel, F. (2021). Does inpatient hyperglycemia predict a worse outcome in COVID-19 intensive care unit patients? *Journal of Diabetes*, 13(3), 253–260. <https://doi.org/10.1111/1753-0407.13137>

- Salama, C., Han, J., Yau, L., Reiss, W. G., Kramer, B., Neidhart, J. D., Criner, G. J., Kaplan-Lewis, E., Baden, R., Pandit, L., Cameron, M. L., Garcia-Diaz, J., Chávez, V., Mekebeb-Reuter, M., Lima de Menezes, F., Shah, R., González-Lara, M. F., Assman, B., Freedman, J., & Mohan, S. V. (2021). Tocilizumab in Patients Hospitalized with Covid-19 Pneumonia. *The New England Journal of Medicine*, 384(1), 20–30. <https://doi.org/10.1056/NEJMoa2030340>
- Samaee, H., Mohsenzadegan, M., Ala, S., Maroufi, SS., Moradimajd, P. (2020). Tocilizumab for treatment patients with COVID-19: Recommended medication for novel disease. *International Immunopharmacology*, 89:107018.
- Samprathi, M., & Jayashree, M. (2021). Biomarkers in COVID-19: An Up-To-Date Review. *Frontiers in Pediatrics*, 8. <https://www.frontiersin.org/articles/10.3389/fped.2020.607647>
- Sardu, C., D’Onofrio, N., Balestrieri, M. L., Barbieri, M., Rizzo, M. R., Messina, V., Maggi, P., Coppola, N., Paolisso, G., & Marfella, R. (2020). Outcomes in Patients With Hyperglycemia Affected by COVID-19: Can We Do More on Glycemic Control? *Diabetes Care*, 43(7), 1408–1415. <https://doi.org/10.2337/dc20-0723>
- Seidu, S., Gillies, C., Zaccardi, F., Kunutsor, S. K., Hartmann-Boyce, J., Yates, T., Singh, A. K., Davies, M. J., & Khunti, K. (2021). The impact of obesity on severe disease and mortality in people with SARS-CoV-2: A systematic review and meta-analysis. *Endocrinology, Diabetes & Metabolism*, 4(1), e00176. <https://doi.org/10.1002/edm2.176>
- Serviddio, G., Villani, R., Stallone, G., Scioscia, G., Foschino-Barbaro, M. P., & Lacedonia, D. (2020). Tocilizumab and liver injury in patients with COVID-19. *Therapeutic Advances in Gastroenterology*, 13, 1756284820959183. <https://doi.org/10.1177/1756284820959183>
- Shenoy, N., Luchtel, R., & Gulani, P. (2020). Considerations for target oxygen saturation in COVID-19 patients: Are we under-shooting? *BMC Medicine*, 18, 260. <https://doi.org/10.1186/s12916-020-01735-2>
- Shi, S., Qin, M., Shen, B., Cai, Y., Liu, T., Yang, F., Gong, W., Liu, X., Liang, J., Zhao, Q., Huang, H., Yang, B., & Huang, C. (2020). Association of Cardiac Injury With Mortality in Hospitalized Patients With COVID-19 in Wuhan, China. *JAMA Cardiology*, 5(7), 802–810. <https://doi.org/10.1001/jamacardio.2020.0950>
- Siddiqi, H. K., & Mehra, M. R. (2020). COVID-19 illness in native and immunosuppressed states: A clinical-therapeutic staging proposal. *The Journal of Heart and Lung Transplantation: The Official Publication of the International Society for Heart Transplantation*, 39(5), 405–407. <https://doi.org/10.1016/j.healun.2020.03.012>
- Simadibrata, DM., Calvin, J., Wijaya, AD., & Ibrahim, NAA. (2021). Neutrophil-to-lymphocyte ratio on admission to predict the severity and mortality of COVID-19 patients: A meta-analysis. *The American Journal of Emergency Medicine*, 42, 60. <https://doi.org/10.1016/J.AJEM.2021.01.006>

- Sivaloganathan, A. A., Nasim-Mohi, M., Brown, M. M., Abdul, N., Jackson, A., Fletcher, S. V., Gupta, S., Grocott, M. P. W., Dushianthan, A., University Hospital Southampton Critical Care and Respiratory Medicine Teams and the REACT investigators, UHS Critical Care Clinical Team, UHS Respiratory Clinical Team, & REACT Investigators. (2020). Noninvasive ventilation for COVID-19-associated acute hypoxaemic respiratory failure: Experience from a single centre. *British Journal of Anaesthesia*, 125(4), e368–e371. <https://doi.org/10.1016/j.bja.2020.07.008>
- Somers, E. C., Eschenauer, G. A., Troost, J. P., Golob, J. L., Gandhi, T. N., Wang, L., Zhou, N., Petty, L. A., Baang, J. H., Dillman, N. O., Frame, D., Gregg, K. S., Kaul, D. R., Nagel, J., Patel, T. S., Zhou, S., Luring, A. S., Hanauer, D. A., Martin, E., ... Pogue, J. M. (2021). Tocilizumab for Treatment of Mechanically Ventilated Patients With COVID-19. *Clinical Infectious Diseases: An Official Publication of the Infectious Diseases Society of America*, 73(2), e445–e454. <https://doi.org/10.1093/cid/ciaa954>
- Song, W., Gui, M., Wang, X., Xiang, Y. (2018). Cryo-EM structure of the SARS coronavirus spike glycoprotein in complex with its host cell receptor ACE2. *PLoS Pathog*, 14(8):e1007236.
- Sosale, A., Sosale, B., Kesavadev, J., Chawla, M., Reddy, S., Saboo, B., & Misra, A. (2021). Steroid use during COVID-19 infection and hyperglycemia—What a physician should know. *Diabetes & Metabolic Syndrome*, 15(4), 102167. <https://doi.org/10.1016/j.dsx.2021.06.004>
- Soy, M., Keser, G., Atagündüz, P., Tabak, F., Atagündüz, I., Kayhan, S. (2020). Cytokine storm in COVID-19: pathogenesis and overview of anti-inflammatory agents used in treatment. *Springer*, 39:2085–2094.
- Sproston, NR., Ashworth, JJ. (2018). Role of C-reactive protein at sites of inflammation and infection. *Frontiers in Immunology*, 9:754.
- Stein-Parbury, J. dan McKinley, S. (2000). Patients' experiences of being in an intensive care unit: a select literature review. *American Association of Critical-Care Nurses*, 9: 20–27.
- Stokes, EK., Zambrano, LD., Anderson, KN., Marder, EP., Raz, KM., El Burai Felix, S., Tie, Y., Fullerton, KE. (2020). Coronavirus Disease 2019 Case Surveillance - United States, January 22-May 30, 2020. *MMWR Morb Mortal Wkly Rep*, 69(24):759-765.
- Stone, J. H., Frigault, M. J., Serling-Boyd, N. J., Fernandes, A. D., Harvey, L., Foulkes, A. S., Horick, N. K., Healy, B. C., Shah, R., Bensaci, A. M., Woolley, A. E., Nikiforow, S., Lin, N., Sagar, M., Schrager, H., Huckins, D. S., Axelrod, M., Pincus, M. D., Fleisher, J., ... BACC Bay Tocilizumab Trial Investigators. (2020). Efficacy of Tocilizumab in Patients Hospitalized with Covid-19. *The New England Journal of Medicine*, 383(24), 2333–2344. <https://doi.org/10.1056/NEJMoa2028836>
- Stringer, D., Braude, P., Myint, P. K., Evans, L., Collins, J. T., Verduri, A., Quinn, T. J., Vilches-Moraga, A., Stechman, M. J., Pearce, L., Moug, S., McCarthy, K., Hewitt, J., Carter, B., & COPE Study Collaborators. (2021). The role of C-reactive protein as a prognostic marker in COVID-

19. *International Journal of Epidemiology*, 50(2), 420–429. <https://doi.org/10.1093/ije/dyab012>
- Sugiyono. (2016). Metode Penelitian Kuantitatif, Kualitatif, dan R&D. PT Alfabet. Bandung.
- Sujarweni, V.W. (2020). Metodologi Penelitian. Pustaka Baru Press. Yogyakarta.
- Sun, W., Luo, Z., Jin, J., Cao, Z., & Ma, Y. (2021). The Neutrophil/Lymphocyte Ratio Could Predict Noninvasive Mechanical Ventilation Failure in Patients with Acute Exacerbation of Chronic Obstructive Pulmonary Disease: A Retrospective Observational Study. *International Journal of Chronic Obstructive Pulmonary Disease*, 16, 2267–2277. <https://doi.org/10.2147/COPD.S320529>
- Susanti, E., Okstoria, M. R., Wijayanti, S., Damayanti, H., Putra, H. E., Chipojola, R., Rahman, M. F., Kurniasari, M. D., & Huda, M. H. (2023). Clinical determinants of oxygen saturation and length of hospitalisation of COVID-19 patients: A cross-sectional study in Indonesia. *Enfermeria Clinica*, 33, S38–S44. <https://doi.org/10.1016/j.enfcli.2023.01.007>
- Szekanecz, Z., Bogos, K., Constantin, T., Fülesdi, B., Müller, V., Rákóczi, É., Várkonyi, I., & Vályi-Nagy, I. (2021). [Antiviral and anti-inflammatory therapies in COVID-19]. *Orvosi Hetilap*, 162(17), 643–651. <https://doi.org/10.1556/650.2021.32230>
- Tamez-Pérez, H. E., Quintanilla-Flores, D. L., Rodríguez-Gutiérrez, R., González-González, J. G., & Tamez-Peña, A. L. (2015). Steroid hyperglycemia: Prevalence, early detection and therapeutic recommendations: A narrative review. *World Journal of Diabetes*, 6(8), 1073–1081. <https://doi.org/10.4239/wjd.v6.i8.1073>
- Tan, C., Huang, Y., Shi, F., Tan, K., Ma, Q., Chen, Y., Jiang, X., & Li, X. (2020). C-reactive protein correlates with computed tomographic findings and predicts severe COVID-19 early. *Journal of Medical Virology*, 92(7), 856–862. <https://doi.org/10.1002/jmv.25871>
- Tanaka, T., Narazaki, M., Kishimoto, T. (2014). IL-6 in inflammation, immunity, and disease. *Cold Spring Harb Perspect Biol*, 6(10):a016295. doi: 10.1101/cshperspect.a016295.
- Tang, N., Li, D., Wang, X., Sun, Z. (2020). Abnormal coagulation parameters are associated with poor prognosis in patients with novel coronavirus pneumonia. *J Thromb Haemost*, 18:844–847. doi: 10.1111/jth.14768.
- Terra, P. O. C., Donadel, C. D., Oliveira, L. C., Meneguetti, M. G., Auxiliadora-Martins, M., Calado, R. T., & De Santis, G. C. (2022). Neutrophil-to-lymphocyte ratio and D-dimer are biomarkers of death risk in severe COVID-19: A retrospective observational study. *Health Science Reports*, 5(2), e514. <https://doi.org/10.1002/hsr2.514>
- Tian, W., Jiang, W., Yao, J. (2020). Predictors of mortality in hospitalized COVID-19 patients: asystematic review and meta-analysis. *J Med Virol*. doi: 10.1002/jmv.26050.
- Tisoncik, JR., Korth, MJ., Simmons, CP., Farrar, J., Martin, TR., Katze, MG. (2012). Into the eye of the cytokine storm. *Microbiol Mol Biol Rev*, 76:16–32. doi: 10.1128/MMBR.05015-11.

- Tleyjeh, I. M., Kashour, Z., Damlaj, M., Riaz, M., Tlayjeh, H., Altannir, M., Altannir, Y., Al-Tannir, M., Tleyjeh, R., Hassett, L., & Kashour, T. (2021). Efficacy and safety of tocilizumab in COVID-19 patients: A living systematic review and meta-analysis. *Clinical Microbiology and Infection: The Official Publication of the European Society of Clinical Microbiology and Infectious Diseases*, 27(2), 215–227. <https://doi.org/10.1016/j.cmi.2020.10.036>
- Torres Acosta, M. A., & Singer, B. D. (2020). Pathogenesis of COVID-19-induced ARDS: Implications for an ageing population. *The European Respiratory Journal*, 56(3), 2002049. <https://doi.org/10.1183/13993003.02049-2020>
- Ulhaq, ZS., Soraya, GV. (2020). Interleukin-6 as a potential biopenanda of COVID-19 progression. *Med Mal Infect*, 50(4):382-383. doi: 10.1016/j.medmal.2020.04.002.
- Valentin, A. dan Ferdinande, P. (2011). Recommendations on basic requirements for intensive care units: structural and organizational aspects. *Intensive Care Medicine*, 37: 1575-1587.
- van Vught, L. A., Klein Klouwenberg, P. M. C., Spitoni, C., Scicluna, B. P., Wiewel, M. A., Horn, J., Schultz, M. J., Nürnberg, P., Bonten, M. J. M., Cremer, O. L., van der Poll, T., & for the MARS Consortium. (2016). Incidence, Risk Factors, and Attributable Mortality of Secondary Infections in the Intensive Care Unit After Admission for Sepsis. *JAMA*, 315(14), 1469–1479. <https://doi.org/10.1001/jama.2016.2691>
- Veiga, V. C., Prats, J. A. G. G., Farias, D. L. C., Rosa, R. G., Dourado, L. K., Zampieri, F. G., Machado, F. R., Lopes, R. D., Berwanger, O., Azevedo, L. C. P., Avezum, Á., Lisboa, T. C., Rojas, S. S. O., Coelho, J. C., Leite, R. T., Carvalho, J. C., Andrade, L. E. C., Sandes, A. F., Pintão, M. C. T., ... Scheinberg, P. (2021a). Effect of tocilizumab on clinical outcomes at 15 days in patients with severe or critical coronavirus disease 2019: Randomised controlled trial. *BMJ*, 372, n84. <https://doi.org/10.1136/bmj.n84>
- Wang, D., Hu, B., Hu, C., Zhu, F., Liu, X., Zhang, J. (2020). Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *JAMA*, 323:1061–1069. doi: 10.1001/jama.2020.1585.
- Wang, G., Wu, C., Zhang, Q. (2020). C-reactive protein level may predict the risk of COVID-19 aggravation. *Open Forum Infect Dis*, 7(5). doi: 10.1093/ofid/ofaa153
- Wang, L. (2020). C-reactive protein levels in the early stage of COVID-19. *Médecine et Maladies Infectieuses*, 50(4), 332–334. <https://doi.org/10.1016/j.medmal.2020.03.007>
- Waris, A., Din, M., Khalid, A., Abbas Lail, R., Shaheen, A., Khan, N., Nawaz, M., Baset, A., Ahmad, I., & Ali, M. (2021). Evaluation of hematological parameters as an indicator of disease severity in Covid-19 patients: Pakistan's experience. *Journal of Clinical Laboratory Analysis*, 35(6), e23809. <https://doi.org/10.1002/jcla.23809>

- Webb, B. J., Peltan, I. D., Jensen, P., Hoda, D., Hunter, B., Silver, A., Starr, N., Buckel, W., Grisel, N., Hummel, E., Snow, G., Morris, D., Stenehjem, E., Srivastava, R., & Brown, S. M. (2020). Clinical criteria for COVID-19-associated hyperinflammatory syndrome: A cohort study. *The Lancet. Rheumatology*, 2(12), e754–e763. [https://doi.org/10.1016/S2665-9913\(20\)30343-X](https://doi.org/10.1016/S2665-9913(20)30343-X)
- Westhoff, M., Schönhofer, B., Neumann, P., Bickenbach, J., Barchfeld, T., Becker, H., Dubb, R., Fuchs, H., Heppner, H. J., Janssens, U., Jehser, T., Karg, O., Kilger, E., Köhler, H.-D., Köhnlein, T., Max, M., Meyer, F. J., Müllges, W., Putensen, C., ... Windisch, W. (2015). [Noninvasive Mechanical Ventilation in Acute Respiratory Failure]. *Pneumologie (Stuttgart, Germany)*, 69(12), 719–756. <https://doi.org/10.1055/s-0034-1393309>
- WHO. (2018). *WHO-ICRC Basic Emergency Care: Approach to the acutely ill and injured*. <https://www.who.int/publications-detail-redirect/basic-emergency-care-approach-to-the-acutely-ill-and-injured>
- Windham, S., Wilson, M. P., Fling, C., Sheneman, D., Wand, T., Babcock, L., MaWhinney, S., & Erlandson, K. M. (2021). Elevated glycohemoglobin is linked to critical illness in CoVID-19: A retrospective analysis. *Therapeutic Advances in Infectious Disease*, 8, 20499361211027390. <https://doi.org/10.1177/20499361211027390>
- Windisch, W., Weber-Carstens, S., Kluge, S., Rossaint, R., Welte, T., & Karagiannidis, C. (2020). Invasive and Non-Invasive Ventilation in Patients With COVID-19. *Deutsches Ärzteblatt International*, 117(31–32), 528–533. <https://doi.org/10.3238/arztebl.2020.0528>
- Wortham, JM, *et al.* (2020). Characteristics of persons who died with COVID-19. *MMWR Morb Mortal Wkly Rep*, 69:923–929.
- Wu, J., Shen, J., Han, Y., Qiao, Q., Dai, W., He, B., Pang, R., Zhao, J., Luo, T., Guo, Y., Yang, Y., Wu, Q., Jiang, W., Zhang, J., Zhang, M., Li, N., Li, W., & Xia, X. (2021). Upregulated IL-6 Indicates a Poor COVID-19 Prognosis: A Call for Tocilizumab and Convalescent Plasma Treatment. *Frontiers in Immunology*, 12, 598799. <https://doi.org/10.3389/fimmu.2021.598799>
- Xie, J., Covassin, N., Fan, Z. (2020). Association between hypoxemia and mortality in patients with COVID-19. *Mayo Clin Proc*, 95(6):1138-1147. doi: 10.1016/j.mayocp.2020.04.006.
- Xu, H., Zhong, L., Deng, J., Peng, J., Dan, H., Zeng, X., Li, T., Chen, Q. (2020). High expression of ACE2 receptor of 2019-nCoV on the epithelial cells of oral mucosa. *Int J Oral Sci*, 12(1):8.
- Xu, X., Han, M., Li, T., Sun, W., Wang, D., Fu, B., Zhou, Y., Zheng, X., Yang, Y., Li, X., Zhang, X., Pan, A., & Wei, H. (2020). Effective treatment of severe COVID-19 patients with tocilizumab. *Proceedings of the National Academy of Sciences of the United States of America*, 117(20), 10970–10975. <https://doi.org/10.1073/pnas.2005615117>
- Yan, X., Li, F., Wang, X., Yan, J., Zhu, F., Tang, S., Deng, Y., Wang, H., Chen, R., Yu, Z., Li, Y., Shang, J., Zeng, L., Zhao, J., Guan, C., Liu, Q., Chen,

- H., Gong, W., Huang, X., ... Li, D. (2020). Neutrophil to lymphocyte ratio as prognostic and predictive factor in patients with coronavirus disease 2019: A retrospective cross-sectional study. *Journal of Medical Virology*, 92(11), 2573–2581. <https://doi.org/10.1002/jmv.26061>
- Yang, A.-P., Liu, J.-P., Tao, W.-Q., & Li, H.-M. (2020). The diagnostic and predictive role of NLR, d-NLR and PLR in COVID-19 patients. *International Immunopharmacology*, 84, 106504. <https://doi.org/10.1016/j.intimp.2020.106504>
- Yang, J. K., Feng, Y., Yuan, M. Y., Yuan, S. Y., Fu, H. J., Wu, B. Y., Sun, G. Z., Yang, G. R., Zhang, X. L., Wang, L., Xu, X., Xu, X. P., & Chan, J. C. N. (2006). Plasma glucose levels and diabetes are independent predictors for mortality and morbidity in patients with SARS. *Diabetic Medicine: A Journal of the British Diabetic Association*, 23(6), 623–628. <https://doi.org/10.1111/j.1464-5491.2006.01861.x>
- Ye, Q., Wang, B., Mao, J. (2020). The pathogenesis and treatment of the “Cytokine Storm” in COVID-19. *J Infect*, 80:607–613. doi: 10.1016/j.jinf.2020.03.037.
- Yoshida, Y., Chu, S., Fox, S., Zu, Y., Lovre, D., Denson, J. L., Miele, L., & Mauvais-Jarvis, F. (2022). Sex differences in determinants of COVID-19 severe outcomes – findings from the National COVID Cohort Collaborative (N3C). *BMC Infectious Diseases*, 22(1), 784. <https://doi.org/10.1186/s12879-022-07776-7>
- Youssef, J., Novosad, S. A., & Winthrop, K. L. (2016). Infection Risk and Safety of Corticosteroid Use. *Rheumatic Diseases Clinics of North America*, 42(1), 157–176, ix–x. <https://doi.org/10.1016/j.rdc.2015.08.004>
- Zhang, C., Wu, Z., Li, JW., Zhao, H., Wang, GQ. (2020). Cytokine release syndrome in severe COVID-19: interleukin-6 receptor antagonist tocilizumab may be the key to reduce mortality. *Int J Antimicrob Agents*, 55:105954. doi: 10.1016/j.ijantimicag.2020.105954.
- Zhang, S., Li, L., Shen, A., Chen, Y., Qi, Z. (2020). Rational Use of Tocilizumab in the Treatment of Novel Coronavirus Pneumonia. *Clin Drug Investig*, 40(6):511-518. doi: 10.1007/s40261-020-00917-3.
- Zheng, K.-L., Xu, Y., Guo, Y.-F., Diao, L., Kong, X.-Y., Wan, X.-J., Zhao, F., Ning, F.-Z., Wang, L.-B., Qiao, F., Zhao, J.-M., Zhou, J.-H., Zhong, Y.-Q., Wu, S.-X., Chen, Y., Jin, G., & Dong, Y.-C. (2020). Efficacy and safety of tocilizumab in COVID-19 patients. *Aging*, 12(19), 18878–18888. <https://doi.org/10.18632/aging.103988>
- Zheng, M., Wang, X., Guo, H., Fan, Y., Song, Z., Lu, Z., Wang, J., Zheng, C., Dong, L., Ma, Y., Zhu, Y., Fang, H., & Ye, S. (2021). The Cytokine Profiles and Immune Response Are Increased in COVID-19 Patients with Type 2 Diabetes Mellitus. *Journal of Diabetes Research*, 2021, e9526701. <https://doi.org/10.1155/2021/9526701>
- Zhou, F., Yu, T., Du, R., Fan, G., Liu, Y., Liu, Z. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet*, 395:1054–1062. doi: 10.1016/S0140-6736(20)30566-3.

- Zhu, L., She, Z.-G., Cheng, X., Qin, J.-J., Zhang, X.-J., Cai, J., Lei, F., Wang, H., Xie, J., Wang, W., Li, H., Zhang, P., Song, X., Chen, X., Xiang, M., Zhang, C., Bai, L., Xiang, D., Chen, M.-M., ... Li, H. (2020). Association of Blood Glucose Control and Outcomes in Patients with COVID-19 and Pre-existing Type 2 Diabetes. *Cell Metabolism*, 31(6), 1068-1077.e3. <https://doi.org/10.1016/j.cmet.2020.04.021>
- Zou, L., Ruan, F., Huang, M. (2020). SARS-CoV-2 viral load in upper respiratory specimens of infected patients. *New England Journal of Medicine*, 10. doi: 1056/NEJMc2001737.