

DAFTAR PUSTAKA

- Amadori A, Zamarchi R, De Silvestro G, Forza G, Cavatton G, Danieli GA, Clementi M, Chieco-Bianchi L. Genetic control of the CD4/CD8 T-cell ratio in humans. *Nature Medicine*. 1995;1(12):1279-1283.
- Amanda, D.A Rasio Neutrofil Limfosit pada COVID-19 ; Wellness Health, 2020
- American Association for Clinical Chemistry (2020). SARS-CoV-2 Cycle Threshold: A Metric that Matters (or Not).
- Arief Bakhtiar, Rena Arusita Maranatha. Acute Respiratory Distress Syndrome. *Jurnal Respirasi* Vol. 4 No. 2 Mei 2018. Departemen Pulomonology dan Ilmu Kedokteran Respirasi, Fakultas Kedokteran, Universitas Airlangga/RSUD Dr. Soetomo.
- Asai, et al. (2021). Could Threshold Cycle Value Correctly Reflect the Severity of Novel Coronavirus Disease 2019 (COVID-19)
- Berghella, V. 2019. COVID-19 : Pregnancy Issue. Diunduh dari <https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-pregnancy-issues#H1703051038>
- Berhan, Y., 2020. What immunological and hormonal protective factors lower the risk of COVID-19 related deaths in pregnant women?. *Journal of Reproductive Immunology*, p.103180.
- Brandt JS, Hill J, Reddy A, Schuster M, Patrick HS, Rosen T, et al. Epidemiology of coronavirus disease 2019 in pregnancy: risk factors and associations with adverse maternal and neonatal outcomes. *Am J Obstet Gynecol*. 2020;1–9.
- Butterworth M, McClellan B, Aklansmith M. Influence of Sex on Immunoglobulin Levels. *Nature*. 1967;214(5094):1224-1225.
- Cai H. Sex difference and smoking predisposition in patients with COVID-19 . *Lancet Respir Med* 2020;8:e20.
- Calippe B, Douin-Echinard V, Laffargue M, Laurell H, Rana-Poussine V, Pipy B, et al. Chronic estradiol administration in vivo promotes the proinflammatory response of macrophages to TLR4 activation: involvement of the phosphatidylinositol 3-kinase pathway. *J Immunol* 2008; 180(12): 7980–8.

- Camargo, J.F., Lin, R.Y., & Komanduri, K.V. (2021). Lack of Correlation Between the SARS-CoV-2 Cycle Threshold (Ct) Value and Clinical Outcomes in Patients with COVID-19 .
- Carr JJ , Brown JM (2001) Introduction to Biomedical Equipment technology , 4th ed. Prentice Hall, Columbus OHIO
- Cascella M, Rajnik M, Aleem A, Dulebohn S, Di Napoli R. Features, evaluation, and treatment of coronavirus (COVID-19). StatPearls. 2021
- Channappanavar R, Fett C, Mack M, Eyck PPT, Meyerholz DK, Perlman S. Perbedaan Berdasarkan Jenis Kelamin dalam Kerentanan terhadap Pernafasan Akut Parah Sindrom Infeksi Virus Corona. J Immunol, 2017; 198 (10), 4046-4053.
- CDC. 2020. COVID-19 and pregnancy. Diunduh dari: <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/special-populations/pregnancy-data-on-COVID-19.html>
- Cennimo, D.J. Medscape (2021). Coronavirus Disease 2019 (COVID-19).
- Chen G, Wu D, Guo W, Cao Y, Huang D, Wang H, Wang T, Zhang X, Chen H, Yu H, Zhang X, Zhang M, Wu S, Song J, Chen T, Han M, Li S, Luo X, Zhao J, Ning Q. Clinical and immunological features of severe and moderate coronavirus disease 2019. The Journal of clinical investigation. 2020;130(5).
- Chousterman BG, Swirski FK, Weber GF. Cytokine storm and sepsis disease pathogenesis. Seminars in Immunopathology. 2017;39(5):517-528.
- Chung, M. *et al.* (2020) 'CT Imaging Features of 2019 Novel Coronavirus (2019-nCoV)', *Radiology*, 295(1), pp. 202–207. doi: 10.1148/radiol.2020200230.
- Defrin D, Ardinal A, Erkadius E. Perbedaan Rerata Kadar Progesterone-Induced Blocking Factor (PIBF) Serum Penderita Abortus Iminens dengan Kehamilan Normal. Jurnal Kesehatan Andalas. 2017 Oct 12;6(2):463-8.
- Ding Xiurong, Yu Yanhua, Lu Bichao. Huo Jianbo, Chen Ming (2020). Dynamic Profile and Clinical Implications of Hematological Parameters in Hospitalized Patients with Coronavirus Disease 2019. Clin Chem Lab Med. 58 (8) : 1365-1371.

- Dossett LA, Swenson BR, Evans HL, Bonatti H, Sawyer RG, May AK (2008) Serum estradiol concentration as a predictor of mortality in people critically ill and injured adults. *Surg Infect (Larchmt)* 9:41–48. <https://doi.org/10.1089/sur.2007.037>
- Elhossamy H, Korrapati S, Cole F, Srinivasan M. Neutrophil / lymphocyte ratio and Lymphopenia as a severity marker rather than diagnostic marker of Covid-19 in pregnant population, A retrospective case series. 2020;(May):1–5.
- Faridz, A.S., Wicaksono, B., Dachlan, E.G. and Widjati, W., 2016. Penurunan progesterone-induced blocking factor (PIBF) sebagai penanda preeklampsia. *Majalah Obstetri dan Ginekologi*, 24(1), pp.13-18.
- Febry, J. (2018) „Perbandingan Kadar Interleukin 6 (IL - 6) dan Parameter Klinis pada Pasien Periodontitis Kronis dengan dan Tanpa Diabetes Mellitus Tipe 2". Di unduh dari <https://www.klikdokter.com/info-sehat/read/3647563/mengenal-d-dimer-pada-pasien-COVID-19> Ayu Maharani pada 11 September 2021.
- Gong, X. *et al.* (2020) 'CT characteristics and diagnostic value of COVID-19 in pregnancy', *PLOS ONE*. Edited by O. Schildgen, 15(7), p. e0235134. doi: 10.1371/journal.pone.0235134.
- Goritzka M, Makris S, Kausar F, Durant LR, Pereira C, Kumagai Y, et al. Alveolar macrophage-derived type I interferons orchestrate innate immunity to RSV through recruitment of antiviral monocytes. *J Exp Med* 2015; 212(5): 699–714.
- Gorski SA, Hufford MM, Braciale TJ. Recent insights into pulmonary repair following virusinduced inflammation of the respiratory tract. *Curr Opin Virol* 2012; 2(3): 233–41.
- Gündüz, Ö. et al. (2023) "Correlation of systemic inflammation biomarkers and disease severity in pregnant women with COVID-19," *Revista da Associacao Medica Brasileira*, 69(6), hal. 2–7. doi: 10.1590/1806-9282.20221614.
- Guo XJ, Thomas PG. New fronts emerge in the influenza cytokine storm. *Semin Immunopathol* 2017; 39(5): 541–50.
- Hamil PW. Tinajuan Pustaka Gejala Klinis Infeksi Virus Corona 2019 (COVID-19). 2020;1(2):172–80.

- Hudić I, Szekeres-Bartho J, Stray-Pedersen B, Fatušić Z, Polgar B, Ećim-Zlojutro V. Lower urinary and serum progesterone-induced blocking factor in women with preterm birth. *Journal of reproductive immunology*. 2016 Sep 1;117:66-9.
- Igarashi H, Kouro T, Yokota T, Comp PC, Kincade PW. Age and stage dependency of estrogen receptor expression by lymphocyte precursors. *Proc Natl Acad Sci USA* 2001; 98(26):15131–6.
- Kadel S, Kovats S. Hormon Seks Mengatur bawaan Sel Kekebalan Tubuh dan Mempromosikan Perbedaan Jenis Kelamin di Infeksi Virus Pernafasan. *Imunol Depan*. 2018; 9: 1653.
- Kauffmann RM, Norris PR, Jenkins JM, Dupont WD, Torres RE, Blume JD, Dossett LA, Hranjec T, Sawyer RG, May AK (2011) Trends in estradiol during critical illness are related to deaths that do not depend on the receipt of estradiol. *J Am Coll Surg* 212:703–712. <https://doi.org/10.1016/j.jamcollsurg.2010.12.017>
- Kaur S, Khan S, Nigam A. Hematological profile and pregnancy: a review. *Int J Adv Med*. 2014;1(2):1
- Kemkes. 2020. Pedoman Pencegahan dan Pengendalian Coronavirus Disease(COVID-19). Diunduh dari https://covid19.go.id/storage/app/media/Protokol/REV-05_Pedoman_P2_COVID-19_13_Juli_2020.pdf pada 2 Oktober 2020.
- Keselman A, Fang X, White PB, Heller NM. Estrogen signaling contributes to sex differences in macrophage polarization during asthma. *J Immunol* 2017; 199(5): 1573–83.
- Klein SL, Jedlicka A, Pekosz A. The Xs and Y of immune responses to viral vaccines. *The Lancet Infectious Diseases*. 2010;10(5):338-349.
- Klein SL, Flanagan KL. Sex differences in immune responses. *Nature Reviews Immunology*. 2016;16(10):626-638.
- Ku, C. W. *et al.* (2021) 'Gestational age-specific normative values and determinants of serum progesterone through the first trimester of pregnancy', *Scientific Reports*, 11(1), p. 4161. doi: 10.1038/s41598-021-83805-w.

- Laffont S, Rouquie N, Azar P, Seillet C, Plumas J, Aspard C, et al. X-Chromosome complement and estrogen receptor signaling independently contribute to the enhanced TLR7-mediated IFN- α production of plasmacytoid dendritic cells from women. *J Immunol* 2014; 193(11): 5444–52.
- Laffont S, Blanquart E, Guery JC. Sex differences in asthma: a key role of androgen-signaling in group 2 innate lymphoid cells. *Front Immunol* 2017; 8: 1069.
- Lim, M.K., Ku, C.W., Tan, T.C., Lee, Y.H.J., Allen, J.C. and Tan, N.S., 2020. Chung, M. *et al.* (2020) 'CT Imaging Features of 2019 Novel Coronavirus (2019-nCoV)', *Radiology*, 295(1), pp. 202–207. doi: 10.1148/radiol.202000230.
- 'Correlation Between White Blood Count Parameter (Neutrophil/ Lymphocyte Ration) and Follicle Stimulating Hormone in Females with Premature Ovarian Insufficiency' (no date).
- Gong, X. *et al.* (2020) 'CT characteristics and diagnostic value of COVID-19 in pregnancy', *PLOS ONE*. Edited by O. Schildgen, 15(7), p. e0235134. doi: 10.1371/journal.pone.0235134.
- Ku, C. W. *et al.* (2021) 'Gestational age-specific normative values and determinants of serum progesterone through the first trimester of pregnancy', *Scientific Reports*, 11(1), p. 4161. doi: 10.1038/s41598-021-83805-w.
- Li, Y. *et al.* (2018) 'Konjac glucomannan octenyl succinate (KGOS) as an emulsifier for lipophilic bioactive nutrient encapsulation', *Journal of the Science of Food and Agriculture*. Edited by F. T. Spradley. Research Triangle Park, NC, 98(15), pp. 5742–5749. doi: 10.1002/jsfa.9122.
- Mauvais-Jarvis, F., Klein, S. L. and Levin, E. R. (2020) 'Estradiol, Progesterone, Immunomodulation, and COVID-19 Outcomes', *Endocrinology*, 161(9). doi: 10.1210/endocr/bqaa127.
- Morelli, S. *et al.* (2015) 'The maternal immune system during pregnancy and its influence on fetal development', *Research and Reports in Biology*, p. 171. doi: 10.2147/RRB.S80652.
- Saban, A. *et al.* (2024) 'Perinatal outcomes among pregnant patients with peripartum coronavirus disease 2019 infection', *Archives of Gynecology and Obstetrics*, 310(2), pp. 793–800. doi: 10.1007/s00404-024-07536-9.
- Shah, N. M. *et al.* (2019) 'Progesterone-Related Immune Modulation of

- Pregnancy and Labor', *Frontiers in Endocrinology*, 10. doi: 10.3389/fendo.2019.00198.
- Shen, Q. *et al.* (2024) 'Peripartum outcomes and immune responses after SARS-CoV-2 infection in the third trimester of pregnancy', *BMC Pregnancy and Childbirth*, 24(1), p. 498. doi: 10.1186/s12884-024-06707-5.
- Szekeres-Bartho, J. and Schindler, A. E. (2019) 'Progestogens and immunology', *Best Practice & Research Clinical Obstetrics & Gynaecology*, 60, pp. 17–23. doi: 10.1016/j.bpobgyn.2019.07.001.
- Xu, K. *et al.* (2024) 'The impact of COVID-19 infections on pregnancy outcomes in women', *BMC Pregnancy and Childbirth*, 24(1), p. 562. doi: 10.1186/s12884-024-06767-7.
- Characterisation of serum progesterone and progesterone- induced blocking factor (PIBF) levels across trimesters in healthy pregnant women. *Scientific reports*, 10(1), pp.1-9.
- Liu H, Wang LL, Zhao SJ, Kwak-Kim J, Mor G, Liao AH. Why are pregnant women susceptible to viral infection: an immunological viewpoint?. *Journal of reproductive immunology*. 2020 Mar 19:103122.
- Liu J, Liu Y, Xiang P, Pu L, Xiong H, Li C, et al. Neutrophil-to-lymphocyte ratio predicts critical illness patients with 2019 coronavirus disease in the early stage. *J Transl Med*. 2020;18(1):1-12.
- Luo P, Liu Y, Qiu L, Liu X, Liu D, Li J. Tocilizumab treatment in COVID-19 : A single center experience. *Journal of Medical Virology*.n/a(n/a).
- López M, Gonce A, Meler E, Plaza A, Hernández S, Martínez-Portilla RJ, et al. Coronavirus Disease 2019 in Pregnancy: A Clinical Management Protocol and Considerations for Practice. *Fetal Diagn Ther*. 2020;47(7):519–28.
- Mauvais-Jarvis F, Klein SL, Levin ER. Estradiol, Progesterone, Immunomodulation, and COVID-19 Outcomes. *Endocrinology*. 2020 Sep;161(9):bqaa127.
- McGonagle D, Sharif K, O'Regan A, Bridgewood C. The Role of Cytokines including Interleukin-6 in COVID-19 induced Pneumonia and Macrophage Activation SyndromeLike Disease. *Autoimmunity Reviews*. 2020:102537.

- Migeon BR. Females are mosaics: X inactivation and sex differences in disease. New York: Oxford University Press. 26. Carrel L, Brown CJ. When the Lyon (ized chromosome) roars: ongoing expression from an inactive X chromosome. *Philos Trans R Soc Lond B Biol Sci*. 2017;372(1733).
- Morelli, S. *et al.* (2015) 'The maternal immune system during pregnancy and its influence on fetal development', *Research and Reports in Biology*, p. 171. doi: 10.2147/RRB.S80652.
- Muniyappa R, Gubbi S. COVID-19 pandemic, coronaviruses, and diabetes mellitus. *American Journal of Physiology-Endocrinology and Metabolism*. 2020 May 1;318(5):E736-41.
- Murphy AJ, Guyre PM, Wira CR, Pioli PA. Estradiol regulates expression of estrogen receptor ERalpha46 in human macrophages. *PLoS One* 2009; 4(5):e5539.10.1371.
- Newton AH, Cardani A, Braciale TJ. The host immune response in respiratory virus infection: balancing virus clearance and immunopathology. *Semin Immunopathol* 2016; 38(4): 471–82.
- Nokhostin Fahimeh, Elham Saffarieh, Seyedeh Reyhaneh Yousefi Sharami (2020). Investigating the Effect of Covid19 on Pregnant Women. *Journal of Critical Reviews* . Vol 7, Issue 7, 2020.
- Norooznezhad Amir Hossein, Eskandarion Sonia, Akbari Razieh, Alimohammadi Shohreh, Nabavian Seyedeh Meedeh et al (2020). Changes of Leukocytes, Neutrophils, and Lymphocytes Count and Dependent Variables in Pregnant Women With Coronavirus Disease 2019 Before and After Caesarean Delivery. *Journal Medical of Virology*; 93; 664 – 666.
- Orrù B, Szekeres-Bartho J, Bizzarri M, Spiga AM, Unfer V. Induced effects of Vitamin D on inflammation and IL-6 release. A further support for COVID-19 management?. *European review for medical and pharmacological sciences*. 2020 Aug 1;24(15):8187-93.
- Peretz J, Pekosz A, Lane AP, Klein SL. Estrogenic compounds reduce influenza A virus replication in primary human nasal epithelial cells derived from female, but not male donors. *Am J Physiol Lung Cell Mol Physiol*. 2016; 310: L415–425.

- Perhimpunan Dokter Paru Indonesia. 2020. Pneumonia COVID-19: Diagnosis dan Penatalaksanaan di Indonesia. Jakarta: PDPI.
- Permana, A. et al. Gambaran Netrofil Pada pasien COVID-19 di Rumah sakit Siloam Bogor. *Journal Thamrin.AC.id*. (2021)
- Prabhu M, Cagino K, Matthews KC, Friedlander RL, Glynn SM, Kubiak JM, et al. Pregnancy and postpartum outcomes in a universally tested population for SARS-CoV-2 in New York City: a prospective cohort study. *BJOG Int J Obstet Gynaecol*. 2020;127(12):1548–56.
- Rabaan, A. et al. (2021). Viral Dynamics and Real-Time RT-PCR Ct Values Correlation with Disease Severity in COVID-19 (abstract). *Diagnostics* (Basel, Switzerland). 11(6), pp. 1091.
- Remuzzi A, Remuzzi G. COVID-19 and Italy: what next? *Lancet* 2020;395:1225–8.
- Reseptor Estrogen Kovats S. Mengatur bawaan Sel Kekebalan dan Jalur Pensinyalan. *Sel Immunol*, 2015; 294 (2), 63-9.
- Rettew JA, Huet-Hudson YM, Marriott I. Testosterone reduces macrophage expression in the mouse of toll-like receptor 4, a trigger for inflammation and innate immunity. *Biol Reprod* 2008; 78(3): 432– 7.
- Rohmah MK, Nurdianto AR. Corona Virus Disease 2019 (COVID-19) pada Wanita Hamil dan Bayi: Sebuah Tinjauan Literatur. *Medica Hosp J Clin Med*. 2020; 7(1A): 329–36
- Sanchez-Hurtado LA, Lugo-Cob R, Tejeda-Huezo BC, Esquivel-Chavez A, Cano-Oviedo AA, Zamora-Varela S, Gomez-Flores SS, ArvizuTachiquin P, Baltazar-Torres JA (2018) Serum estradiol levels at intensive care unit admission and mortality in critically ill patients. *Nursing Med J Crit India* 22:96–99.https://doi.org/10.4103/ijccm.IJCCM_395_16
- Seillet C, Laffont S, Tremollieres F, Rouquie N, Ribot C, Arnal JF, et al. The TLR-mediated response of plasmacytoid dendritic cells is positively regulated by estradiol in vivo through cell-intrinsic estrogen receptor alpha signaling. *Blood* 2012; 119(2): 454– 64.
- Shah, N. M. *et al.* (2019) 'Progesterone-Related Immune Modulation of Pregnancy and Labor', *Frontiers in Endocrinology*, 10. doi:

10.3389/fendo.2019.00198.

Shao, F. et al. (2023) "Characterization of mild or asymptomatic patient admitted with Omicron variant of COVID-19 infection in Tibetan mobile cabin hospital China, August—October 2022," *Frontiers in Public Health*, 11(August), hal. 1–7. doi: 10.3389/fpubh.2023.1174944.

Straub RH. The Complex Role of Estrogens in Inflammation. *Endocrine reviews*. 2007;28(5):521-574.

Suba Z. Stabilisasi DNA dengan upregulasi pensinyalan estrogen dalam pembawa mutasi gen BRCA. *Obat Des Devel There* 2015; 9: 2663– 75.

Susilo, A., Rumende, C.M., Pitoyo, C.W., Santoso, W.D., Yulianti, M., Herikurniawan, H., Sinto, R., Singh, G., Nainggolan, L., Nelwan, E.J. and Chen, L.K., 2020. Coronavirus disease 2019: Tinjauan literatur terkini. *Jurnal Penyakit Dalam Indonesia*, 7(1), pp.45-67.

Szekeres-Bartho, J., 2018. The role of progesterone in feto-maternal immunological cross talk. *Medical Principles and Practice*, 27(4), pp.301-307.

Szekeres-Bartho, J. and Schindler, A.E., 2019. Progestogens and immunology. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 60, pp.17-23.

Tanaka, T. and Kishimoto, T. (2014) „The biology and medical implications of interleukin-6", *Cancer immunology research*, 2(4), pp. 288–294. doi: 10.1158/2326-6066.CIR-14-0022.

Tanaka T, Narazaki M, Kishimoto T. Immunotherapeutic implications of IL- 6 blockade for cytokine storm. *Immunotherapy*. 2016;8(8):959-970.

Tan L, Wang Q, Zang D, Ding J, Huang Q, Tang YQ, et al. Lymphopenia Predicts disease severity of COVID-19: a descriptive and predictive study. *Signal Transduct Target Ther*. 2020;5(1):16-8.

Vanderschueren D, Bouillon R. Estrogen Deficiency in Men Is a Challenge for Both the Hypothalamus and Pituitary. *J Clin Endocrin Metab* 85(9); 3024–3026.

Wastnedge EA, Reynolds RM, Van Boeckel SR, Stock SJ, Denison FC, Maybin JA, et al. Pregnancy and COVID-19. *Physiol Rev*.

2021;101(1):303–18.

WHO. 2020. Coronavirus disease (COVID-19) pandemic. Diunduh dari <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> pada tanggal 2 Oktober 2020.

Yan S, Song X, Lin F, Zhu H, Wang X, Li M, et al. Clinical characteristics of coronavirus disease 2019 in Hainan, China. *MedRxiv*. 2020.

Yoo JK, Kim TS, Hufford MM, Braciale TJ. Viral infection of the lung: host response and sequelae. *J Allergy Clin Immunol* 2013; 132(6):1263– 76. Tennessee Department of Health. Information on Cycle Threshold (Ct) Values for SARS-CoV-2.

Ye Q, Wang B, Mao J. The pathogenesis and treatment of the 'Cytokine Storm' in COVID-19. *J Infect*. 2020.

Yusuf, Y. Nurisyah, S, Hasyim, A.A., Amru, K & Kadir, A. Evaluasi rasio neutrophil limfosit (RNL) untuk diagnosis COVID 19 pada pasien di RS Tadjuddin Chalid, Makassar, Indonesia. *Jurnal Bionature* 22 ,1-7(2021)

Zikuan Leng. Transplantation of ACE2- Mesenchymal Stem Cells Improves the Outcome of Patients with COVID-19 Pneumonia. *Aging Dis*. 2020;11(2):216-228.

Zhang JJ, Dong X, Cao YY, et al. Clinical characteristics of 140 patients infected with SARS-CoV-2 in Wuhan, China. *Allergy* 2020;00:1–12

Xu, K. *et al.* (2024) 'The impact of COVID-19 infections on pregnancy outcomes in women', *BMC Pregnancy and Childbirth*, 24(1), p. 562. doi: 10.1186/s12884-024-06767-7.