

## DAFTAR PUSTAKA

- Abella, V., Scotece, M., Conde, J., Pino, J., Gonzalez-Gay, M.A., *et al.* 2017. Leptin in the interplay of inflammation, metabolism and immune system disorders. *Nat. Rev. Rheumatol.* 13, 100–109.
- Adamson, J.W., 2008. The anemia of inflammation/malignancy: mechanisms and management. *Hematology Am. Soc. Hematol. Educ. Program*, 159–165.
- Adnyana, I.A., 2019. Interleukin-6 ( IL-6 ), Interleukin-8 ( IL-8 ), and Tumor Necrosis Factor- Alpha ( TNF- a ): Their Role in the Development and Metastasis of Tumor Cells. *Sains Med.* 10, 78–83.
- Alamsyah, Widyaningrum, D., KSL, E., 2018. Hubungan Masa Simpan Packed Red Cell Dengan Kejadian Febrile Non Haemolytic Tranfusion Reakction (FNHTRs). *Media Med. Muda* 3, 1–6.
- American Cancer Society, 2020. Cancer Facts & Figures 2020. *CA. Cancer J. Clin.* 1–76.
- Arnestad, J.P., Bengtson, A., Bengtson, J.P., Tylman, M., Redl, H., Schlag, G., 1994. Formation of cytokines by retransfusion of shed whole blood. *Br. J. Anaesth.* 72, 422–425.
- Avall, A., Hyllner, M., Bentson, J.P., Carisson, L., Bengtsson, A., 1997. Postoperative Inflammatory Response after Autologous and Allogeneic Blood Transfusion. *Anesthesiology* 87, 511–516.
- Birgegård, G., Aapro, M.S., Bokemeyer, C., Dicato, M., Drings, P., Hornedo, J., Krzakowski, M., Ludwig, H., Pecorelli, S., Schmoll, H., Schneider, M., Schrijvers, D., Shasha, D., Van Belle, S., 2005. Cancer-related anemia: Pathogenesis, prevalence and treatment. *Oncology* 68, 3–11.
- Blajchman, M.A., 1997. Allogeneic blood transfusions, immunomodulation, and postoperative bacterial infection: do we have the answers yet? *Transfusion* 37, 121–125.
- Bordin, J.O., Heddle, N.M., Blajchman, M.A., 1994. Biologic effects of leukocytes present in transfused cellular blood products. *Blood* 84, 1703–1721.
- Bridges, K.R., Pearson, H.A., 2008. Cancer and Anemia, in: *Anemias and Other Blood Disorders*. McGraw-Hill, pp. 58–80.
- Bron, D., Meuleman, N., Mascaux, C., 2001. Biological basis of anemia. *Semin. Oncol.* 28, 1–6.
- Chen, D., Serrano, K., Devine, D. V., 2016. Introducing the red cell storage lesion. *ISBT Sci. Ser.* 11, 26–33.
- Coe, C.L., Love, G.D., Karasawa, M., Kawakami, N., Markus, H.R., Tracy, R.P., Ryff, C.D., 2011. Population Differences in Proinflammatory Biology: Japanese have Healthier Profiles than Americans. *Brain Behav Immun* 25, 494–502.
- Dicato, M., Plawny, L., Diederich, M., 2010. Anemia in cancer. *Ann. Oncol.*, 21(7) :167–172.
- Dziczkowski, J.S., Barrett, B.B., Nester, D., Campbell, M., Cook, J., Sugrue, M., Andersen, J.W., Anderson, K.C., 1995. Characterization of reactions after exclusive transfusion of white cell-reduced cellular blood components. *Transfusion* 35, 20–25.

- Elizalde, J.I., Clemente, J., Marín, J.L., Panés, J., Aragón, B., Mas, A., Piqué, J.M., Terés, J., 1997. Early changes in hemoglobin and hematocrit levels after packed red cell transfusion in patients with acute anemia. *Transfusion* 37, 573–576.
- Elzik, M.E., Dirschl, D.R., Dahners, L.E., 2006. Correlation of transfusion volume to change in hematocrit. *Am. J. Hematol.* 81, 145–146.
- Febriani, A., Rahmawati, Y., 2019. Efek Samping Hematologi Akibat Kemoterapi dan Tatalaksananya. *J. Respirasi* 5, 22.
- FineTest, 2019. Human IL-6 (Interleukin 6) ELISA Kit. Wuhan, China.
- Fisher, D.T., Appenheimer, M.M., Evans, S.S., 2014. The Two Faces of IL-6 in the Tumor Microenvironment. *Semin Immunol* 26, 38–47.
- Ganz, T., Nemeth, E., 2011. Hepcidin and disorders of iron metabolism. *Annu. Rev. Med.* 62, 347–360.
- Gaspar, B.L., Sharma, P., Das, R., 2015. Anemia in malignancies: Pathogenetic and diagnostic considerations. *Hematology* 20, 18–25.
- Goswami, B., Mittal, P., Gupta, N., 2013. Correlation of Levels of IL-6 with Tumor Burden and Receptor Status in Patients of Locally Advanced Carcinoma Breast. *Indian J. Clin. Biochem.* 28, 90–94.
- Goubran, H.A., Elemary, M., Radosevich, M., Seghatchian, J., El-Ekiaby, M., Burnouf, T., 2016. Impact of Transfusion on Cancer Growth and Outcome, *Cancer Growth and Metastasis* 9, 1-8.
- Grotto, H.Z.W., 2008. Anaemia of cancer: An overview of mechanisms involved in its pathogenesis. *Med. Oncol.* 25, 12–21.
- Herault, O., Binet, C., Rico, A., Degenne, M., Bernard, M.-C., Chassaigne, M., Sensebe, L., 2001. Evaluation of Performance of White Blood Cell Reduction Filters: An Original Flow Cytometric Method for Detection and Quantification of Cell-Derived Membrane Fragments. *Cytometry* 45, 277–284.
- Honda, K. ichi, Ishiko, O., Tatsuta, I., Deguchi, M., Hirai, K., Nakata, S. ichi, Sumi, T., Yasui, T., Ogita, S., 1995. Anemia-inducing Substance from Plasma of Patients with Advanced Malignant Neoplasms. *Cancer Res.* 55, 3623–3628.
- Jabłońska, E., Kiluk, M., Markiewicz, W., Piotrowski, L., Grabowska, Z., Jabłoński, J., 2001. TNF- $\alpha$ , IL-6 and their soluble receptor serum levels and secretion by neutrophils in cancer patients. *Arch. Immunol. Ther. Exp. (Warsz)*. 49, 63–69.
- Kamilah, D., Widyaningrum, D., 2019. Hubungan jenis packed red cell (PRC) yang ditransfusikan dengan reaksi transfusi febrile non haemolytic transfusion reaction ( FNHTR ). *Intisari Sains Medis* 10, 227–231.
- Kato, H., Kinoshita, T., Suzuki, S., Nagasaka, T., Hatano, S., Murate, T., Saito, H., Hotta, T., 1998. Production and effects of interleukin-6 and other cytokines in patients with non-Hodgkin's lymphoma. *Leuk. Lymphoma* 29, 71–79.
- Keir, A.K., McPhee, A.J., Andersen, C.C., Stark, M.J., 2013. Plasma cytokines and markers of endothelial activation increase after packed red blood cell transfusion in the preterm infant. *Pediatr. Res.* 73, 75–79.
- Kementerian Kesehatan Republik Indonesia, 2019. Artikel Hari Kanker Sedunia 2019. Available from URL

<https://www.depkes.go.id/article/view/19020100003/hari-kanker-sedunia-2019.html>. Accessed 25 Mei 2020

- Kling, P.J., Dragsten, P.R., Roberts, R.A., Dos Santos, B., Brooks, D.J., Hedlund, B.E., Taetle, R., 1996. Iron deprivation increases erythropoietin production in vitro, in normal subjects and patients with malignancy. *Br. J. Haematol.* 95, 241–248.
- Kor, D.J., Van Buskirk, C.M., Gajic, O., 2009. Red blood cell storage lesion. *Bosn. J. Basic Med. Sci.* 9.
- Kumari, N., Dwarakanath, B.S., Das, A., Bhatt, A.N., 2016. Role of interleukin-6 in cancer progression and therapeutic resistance. *Tumor Biol.* 37, 11553–11572.
- Larsen, R., Sandhu, N., Heegaard, N. H. H., Ullum, H., von Stemmann, J. H., Sorensen, E., Nellemann, D. S., Hansen, Et M. B., 2017. Changes in circulating inflammatory markers following febrile non-haemolytic transfusion reactions to leucoreduced red cells. *Vox Sanguinis*, 113: 76-79
- Leng, S., Xue, Q.L., Huang, Y., Semba, R., Chaves, P., Bandeen-Roche, K., Fried, L., Walston, J., 2005. Total and differential white blood cell counts and their associations with circulating interleukin-6 levels in community-dwelling older women. *Journals Gerontol. - Ser. A Biol. Sci. Med. Sci.* 60, 195–199.
- Lin, J., Tzeng, C., Hao, T., Hu, H., Ho, Y., Lyou, J., Liu, J.M., Ho, C., Yung, C., 2002. Cytokine release in febrile non-haemolytic red cell transfusion reactions. *Vox Sang.* 82, 156–160.
- Lind, M., Vernon, C., Cruickshank, D., Wilkinson, P., Littlewood, T., Stuart, N., Jenkinson, C., Grey-Amante, P., Doll, H., Wild, D., 2002. The level of haemoglobin in anaemic cancer patients correlates positively with quality of life. *Br. J. Cancer* 86, 1243–1249.
- Littlewood, T., Mandelli, F., 2002. The effects of anemia in hematologic malignancies: More than a symptom. *Semin. Oncol.* 29, 40–44.
- Ludwiczek, S., Aigner, E., Theurl, I., Weiss, G., 2003. Cytokine-mediated regulation of iron transport in human monocytic cells. *Blood* 101, 4148–4154.
- Luthfa Mudrika, 2020. Hubungan Viral Load Hiv Dengan Kadar Interleukin 6 ( IL-6 ) Pada Pasien Hiv Yang Belum Mendapat Terapi Antiretroviral. Thesis, pp: 33-35
- M.R. Nowrousian, 2008. *Recombinant Human Erythropoietin (rhEPO) in Clinical Oncology*, 2nd editio. ed. SpringerWienNewYork, Germany.
- MacCiò, A., Madeddu, C., Gramignano, G., Mulas, C., Floris, C., Sanna, E., Cau, M.C., Panzone, F., Mantovani, G., 2012. A randomized phase III clinical trial of a combined treatment for cachexia in patients with gynecological cancers: Evaluating the impact on metabolic and inflammatory profiles and quality of life. *Gynecol. Oncol.* 124, 417–425.
- Macciò, A., Madeddu, C., Gramignano, G., Mulas, C., Tanca, L., Cherchi, M.C., Floris, C., Omoto, I., Barracca, A., Ganz, T., 2015. The role of inflammation, Iron, And nutritional status in cancer-related anemia: Results of a large, Prospective, Observational study. *Haematologica* 100, 124–132.
- Madeddu, C., Gramignano, G., Astara, G., Demontis, R., Sanna, E., Atzeni, V., Macciò, A., 2018. Pathogenesis and treatment options of cancer related

- anemia: Perspective for a targeted mechanism-based approach. *Front. Physiol.* 9, 1–20.
- McCranor, B.J., Kim, M.J., Cruz, N.M., Xue, Q.L., Berger, A.E., Walston, J.D., Civin, C.I., Roy, C.N., 2014. Interleukin-6 directly impairs the erythroid development of human TF-1 erythroleukemic cells. *Blood Cells, Mol. Dis.* 52, 126–133.
- Meikle, C.K., Meisler, A.J., Bird, C.M., Jeffries, J.A., Azeem, N., Garg, P., Crawford, E.L., Kelly, C.A., Gao, T.Z., Wuescher, L.M., Willey, J.C., Worth, R.G., 2020. Platelet-T cell aggregates in lung cancer patients: Implications for thrombosis. *PLoS One* 15, 1–14.
- Menitove, J.E., 1999. Standards for blood banks and transfusion services. 19th ed. Bethesda MD : *Am Assocn of Blood Bank*. pp. 1–20.
- Mohandas, K., Aledort, L., 1995. Transfusion requirements, risks, and costs for patients with malignancy. *Transfusion* 35, 427–430.
- Müller, M.M., Geisen, C., Zacharowski, K., Tonn, T., Seifried, E., 2015. Transfusion of Packed Red Cells. *Dtsch. Arztebl. Int.* 112, 507–518.
- Muylle, L., 1995. The role of cytokines in blood transfusion reactions. *Blood Rev.* 9, 77–83.
- Muylle, L., Joos, M., Wouters, E., De Bock, R., Peetermans, M.E., 1993. Increased tumor necrosis factor alpha (TNF alpha), interleukin 1, and interleukin 6 (IL-6) levels in the plasma of stored platelet concentrates: relationship between TNF alpha and IL-6 levels and febrile transfusion reactions. *Transfusion* 33, 195–199.
- Nemeth, E., Ganz, T., 2014. Anemia of inflammation. *Hematol Oncol Clin Nort Am* 28, 671–681.
- Nishimoto, N., Kishimoto, T., Yoshizaki, K., 2000. Anti-interleukin 6 receptor antibody treatment in rheumatic disease. *Ann. Rheum. Dis.* 59, 21–27.
- Pangribowo, S., 2019. Beban Kanker di Indonesia. Pusat Data Dan Informasi Kementerian Kesehatan RI. Available from URL <https://pusdatin.kemkes.go.id>. Accessed 15 Desember 2020
- Perkins, H.A., Payne, R., Ferguson, J., Wood, M., 1966. Nonhemolytic Febrile Transfusion Reactions. *Vox Sang* 11, 578–600.
- Purcell, S.L., Claus, M., Hosgood, G., Smart, L., 2015. Effect of leukoreduction on concentrations of interleukin-8, interleukin-1 $\beta$ , and tumor necrosis factor- $\alpha$  in canine packed red blood cells during storage. *Am. J. Vet. Res.* 76, 969–974.
- Raj, D.S.C., 2009. Role of Interleukin-6 in the Anemia of Chronic Disease. *Semin. Arthritis Rheum.* 38, 382–388.
- Rajesh, K., Harsh, S., Amarjit, K., 2015. Effects of Prestorage Leukoreduction on the Rate of Febrile Nonhemolytic Transfusion Reactions to Red Blood Cells in a Tertiary Care Hospital. *Ann. Med. Health Sci. Res.* 5, 185–188.
- Remy, K.E., Hall, M.W., Cholette, J., Juffermans, N.P., Nicol, K., Doctor, A., Blumberg, N., Spinella, P.C., Norris, P.J., Dahmer, M.K., Muszynski, J.A., 2018. Mechanisms of red blood cell transfusion-related immunomodulation. *Transfusion* 58, 804–815.
- Riggert, J., Simson, G., Dittmann, J., Köhler, M., 1995. Prestorage Leukocyte

- Depletion with In-Line Filtration of Whole Blood in Comparison with Blood Component Leukocyte Depletion. *Vox Sang.* 69, 201–205.
- Roche Diagnostic, 2018. Elecsys IL-6 kit Cobas.
- Rodgers, G.M., Becker, P.S., Blinder, M., 2012. Cancer and chemotherapy-induced anemia: Clinical practice guidelines in oncology. - *JNCCN J. Natl. Compr. Cancer Netw.* 10, 628–653.
- Roubinian, N.H., Looney, M.R., Kor, D.J., Lowell, C.A., Gajic, O., Hubmayr, R.D., *et al.* 2015. Cytokines and clinical predictors in distinguishing pulmonary transfusion reactions. *Transfusion*, 55(8): 1838–1846.
- Saba, H.I., 1998. Anemia in cancer patients: Introduction and overview. *Cancer Control* 5, 3–5.
- Setrerrahmane, S., Xu, H., 2017. Tumor-related interleukins: Old validated targets for new anti-cancer drug development. *Mol. Cancer* 16, 1–17.
- Shabir, G.A., 2004. A Practical Approach to Validation of HPLC Methods Under Current Good Manufacturing Practices. *J. Valid. Technol.* 10, 210–218.
- Shanwell, A., Kristiansson, M., Remberger, M., Ringdén, O., 1997. Generation of cytokines in red cell concentrates during storage is prevented by prestorage white cell reduction. *Transfusion* 37, 678–684.
- Shukla, R., Patel, T. & Gupte, S. 2015. Release of cytokines in stored whole blood and red cell concentrate : Effect of leukoreduction. *Asian J of Transf Sci*, 9 (2): 145–149.
- Simpson, R.J., Hammacher, A., Smith, D.K., Matthews, J.M., Ward, L.D., 1997. Interleukin-6: Structure-function relationships. *Protein Sci.* 6, 929–955.
- Singh, S., Kumar, A., 2009. Leukocyte depletion for safe blood transfusion. *Biotechnol. J.* 4, 1140–1151.
- Siregar, R.A., 2019. Reaksi Transfusi. Medan. Available from URL <http://repository.usu.ac.id/handle/123456789/10642>. Accessed 29 September 2020
- Smolen, J.S., Maini, R.N., 2006. Interleukin-6 : a new therapeutic target. *Arthritis Res. Ther.* 8, 1–4.
- Spivak, J.L., 2005. The anaemia of cancer: Death by a thousand cuts. *Nat. Rev. Cancer* 5, 543–555.
- Srihartaty, Siti, Y., Soedarmono, M., Wahidiat, P.A., 2014. Perbedaan Penurunan Jumlah Leukosit dan Sitokin pada Packed-Red Cell dengan Metode Buffy-Coat Depleted dan Modifikasi Bed-Side Leucocyte Filtration. *J Indon Med Asso.* 64, 447–450.
- Stack, G., Snyder, E., 1994. Cytokine generation in stored platelet concentrates. *Transfusion* 34, 20–25.
- SOP UPTD Sardjito, 2017
- Sutandyo, N., 2007. Transfusi pada pasien kanker: Manfaat dan Risiko. *Indones. J. Cancer* 3, 115–120.
- Tanaka, K., Yamase, K., 1962. Blood transfusion reaction and leukopenia. *Bibl. Haematol.* 13, 365–368.
- Torti, F.M., Torti, S. V., 2002. Regulation of ferritin genes and protein. *Blood* 99, 3505–3516. h



- Triyono, T., Bahraen, R., 2019. Platelet Leucocyte Aggregates (Pla) Analysis in Leucodepleted and Non-Leucodepleted Platelet Concentrates. *Indones. J. Clin. Pathol. Med. Lab.* 25, 340-342
- Urner, M., Herrmann, I.K., Buddeberg, F., Schuppli, C., Roth Z'graggen, B., Hasler, M., Schanz, U., Mehr, M., Spahn, D.R., Beck Schimmer, B., 2012. Effects of Blood Products on Inflammatory Response in Endothelial Cells In Vitro. *PLoS One* 7, 1-8.
- Watkins, T., Surowiecka, M.K., McCullough, J., 2015. Transfusion Indications for Patients With Cancer. *Cancer Control* 22, 38-46.
- Wei, J., Xu, H., Davies, J.L., Hemmings, G.P., 1992. Increase Of Plasma IL-6 Concentration With Age In Healty Subjects. *Life Sci.* 51, 1953-1956.
- Weiss, Guenter, M.D., Lawrence T. Goodnough, M., 2005. Anemia of Chronic Disease. *N. Engl. J. Med.* 352, 1011-1023.
- Wiesen, A.R., Hospenthal, D.R., Byrd, J.C., Glass, K.L., Howard, R.S., Diehl, L.F., 1994. Equilibration of hemoglobin concentration after transfusion in medical inpatients not actively bleeding. *Ann. Intern. Med.* 121, 278-280.
- Wood, E.M., Shortt, J., Polizzotto, M.N., Waters, N., Borosak, M., Moran, M., Comande, M., Devine, A., Jolley, D.J., 2009. Assessment of the urgency and deferability of transfusion to inform emergency blood planning and triage: The Bloodhound prospective audit of red blood cell use. *Transfusion* 49, 2296-2303.
- Yan, S.L.S., Russell, J., Granger, D.N., 2014. Platelet activation and platelet-leukocyte aggregation elicited in experimental colitis are mediated by interleukin-6. *Inflamm. Bowel Dis.* 20, 353-362.
- Zarogoulidis, P., Katsikogianni, F., Tsiouda, T., Sakkas, A., Katsikogiannis, N., Zarogoulidis, K., 2014. Interleukin-8 and interleukin-17 for cancer. *Cancer Invest.* 32, 197-205.
- Zarogoulidis, P., Yarmus, L., Darwiche, K., Walter, R., Huang, H., Li, Z., Zaric, B., Tsakiridis, K., Zarogoulidis, K., 2013. Interleukin-6 cytokine: A multifunctional glycoprotein for cancer. *Immunome Res.* 9, 1-11.
- Zhao, H., Zhou, H., Cao, Q., Wang, C., Bai, J., Lv, P., Zhao, F., 2018. Effect of allogeneic blood transfusion on levels of il-6 and sil-r2 in peripheral blood of children with acute lymphocytic leukemia. *Oncol. Lett.* 16, 849-852.