

## DAFTAR PUSTAKA

- Aicher, A., Heeschen, C., Mildner-Rihm, C., Urbich, C., Ihling, C., Technau-Ihling, K. *et al.*, 2003. Essential role of endothelial nitric oxide synthase for mobilization of stem and progenitor cells. *Nature Medicine*, 9(11), 1370–1376.
- Alcaino, H., Greig, D., Chiong, M., Verdejo, H., Miranda, R., Concepcion, R. *et al.*, 2008. Serum uric acid correlates with extracellular superoxide dismutase activity in patients with chronic heart failure. *European Journal of Heart Failure*, 10(7), 646–651.
- Badan Penelitian dan Pengembangan Kesehatan, 2013. Riset Kesehatan Dasar (RISKESDAS) 2013, *Laporan Nasional 2013*.
- Bergamini, C., Cicoira, M., Rossi, A., & Vassanelli, C., 2009. Oxidative stress and hyperuricaemia: pathophysiology, clinical relevance, and therapeutic implications in chronic heart failure. *European Journal of Heart Failure*, 11(5), 444–452.
- Billiet, L., Doaty, S., Katz, J. D., & Velasquez, M. T., 2014. Review of Hyperuricemia as New Marker for Metabolic Syndrome. *ISRN Rheumatology*, 2014, 1–7.
- Brand, F. N., McGee, D. L., Kannel, W. B., Stokes, J. 3rd, & Castelli, W. P., 1985. Hyperuricemia as a risk factor of coronary heart disease: The Framingham Study. *American Journal of Epidemiology*, 121(1), 11–18.
- Brunton, L.L., Chabner, B.A., & Knollman, B.C., 2011. *Goodman & Gilman's The Pharmacological Basis of Therapeutics*. 12th ed. New York: McGraw-Hill
- Cervantes Gracia, K., Llanas-Cornejo, D., & Husi, H., 2017. CVD and Oxidative Stress. *Journal of Clinical Medicine*, 6(2), 22.
- Chen, A. F., Ren, J., & Miao, C.-Y. 2002. Nitric oxide synthase gene therapy for cardiovascular disease. *Japanese Journal of Pharmacology*, 89(4), 327–336.
- Crack, P. J., & Taylor, J. M., 2005. Reactive oxygen species and the modulation of stroke. *Free Radical Biology & Medicine*, 38(11), 1433–1444.
- Estácio, S. G., Leal, S. S., Cristóvão, J. S., Faísca, P. F. N., & Gomes, C. M., 2015. Calcium binding to gatekeeper residues flanking aggregation-prone segments underlies non-fibrillar amyloid traits in superoxide dismutase 1 (SOD1). *Biochimica et Biophysica Acta - Proteins and Proteomics*, 1854(2), 118–126.
- Förstermann, U., & Sessa, W. C., 2012. Nitric oxide synthases: regulation and function. *European Heart Journal*, 33(7), 829–837, 837a-837d.
- Fridovich, I., 1995. Superoxide radical and superoxide dismutases. *Annual Review of Biochemistry*, 64, 97–112.
- Fukai, T., 2007. Extracellular SOD inactivation in high-volume hypertension: Role of hydrogen peroxide. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 27(3), 442–444.
- Fukai, T., & Ushio-Fukai, M., 2011. Superoxide dismutases: Role in redox signaling, vascular function, and diseases. *Antioxidants and Redox Signaling*, 15(6), 1583–1606.
- Garg, U. C., & Hassid, A., 1989. Nitric oxide-generating vasodilators and 8-bromo-cyclic guanosine monophosphate inhibit mitogenesis and proliferation of

- cultured rat vascular smooth muscle cells. *The Journal of Clinical Investigation*, 83(5), 1774–1777.
- Ghio, A. J., Suliman, H. B., Carter, J. D., Abushamaa, A. M., & Folz, R. J., 2002. Overexpression of extracellular superoxide dismutase decreases lung injury after exposure to oil fly ash. *American Journal of Physiology. Lung Cellular and Molecular Physiology*, 283(1), 211–218.
- Gómez-Marcos, M. A., Blázquez-Medela, A. M., Gamella-Pozuelo, L., Recio-Rodriguez, J. I., García-Ortiz, L., & Martínez-Salgado, C., 2016. Serum Superoxide Dismutase Is Associated with Vascular Structure and Function in Hypertensive and Diabetic Patients. *Oxidative Medicine and Cellular Longevity*, 2016.
- Haryono, A., Nugrahaningsih, D. A. A., Sari, D. C. R., Romi, M. M., & Arfian, N., 2018. Reduction of Serum Uric Acid Associated with Attenuation of Renal Injury, Inflammation and Macrophages M1/M2 Ratio in Hyperuricemic Mice Model. *The Kobe Journal of Medical Sciences*, 64(3), 107–114.
- Hayden, M. R., & Tyagi, S. C., 2004. Uric acid: A new look at an old risk marker for cardiovascular disease, metabolic syndrome, and type 2 diabetes mellitus: The urate redox shuttle. *Nutrition and Metabolism*, 1, 3–13.
- Heiss, C., Rodriguez-Mateos, A., & Kelm, M., 2015. Central Role of eNOS in the Maintenance of Endothelial Homeostasis. *Antioxidants and Redox Signaling*, 22(14), 1230–1242.
- Hurt, E. M., Thomas, S. B., Peng, B., & Farrar, W. L., 2007. Molecular consequences of SOD2 expression in epigenetically silenced pancreatic carcinoma cell lines. *British Journal of Cancer*, 97(8), 1116–1123.
- Inal, M. E., Kanbak, G., & Sunal, E., 2001. Antioxidant enzyme activities and malondialdehyde levels related to aging. *Clinica Chimica Acta; International Journal of Clinical Chemistry*, 305(1–2), 75–80.
- Jia, L., Xing, J., Ding, Y., Shen, Y., Shi, X., Ren, W. *et al.*, 2013. Hyperuricemia causes pancreatic  $\beta$ -cell death and dysfunction through NF- $\kappa$ B signaling pathway. *PloS One*, 8(10), 78284–78284.
- Jin, M., Yang, F., Yang, I., Yin, Y., Luo, J. J., Wang, H., & Yang, X. F., 2012. Uric acid, hyperuricemia and vascular diseases. *Frontiers in Bioscience*, 17(2), 656–669.
- Johnson, F., & Giulivi, C., 2005. Superoxide dismutases and their impact upon human health. *Molecular Aspects of Medicine*, 26(4-5 SPEC. ISS.), 340–352.
- Katzung, B.G., Master, S.B., & Trevor, A.J., 2009. *Basic & Clinical Pharmacology*. 11th ed. New York: McGraw-Hill
- Kim, I. Y., Lee, D. W., Lee, S. B., & Kwak, I. S., 2014. The role of uric acid in kidney fibrosis: Experimental evidences for the causal relationship. *BioMed Research International*, 2014.
- Kurniari, P. K., 2011. Hubungan Hiperurisemia Dan Fraction Uric Acid Clearance. *Jurnal Penyakit Dalam*, 12, 77–80.
- Kuwabara, M., 2016. Hyperuricemia, Cardiovascular Disease, and Hypertension. *Pulse (Basel, Switzerland)*, 3(3–4), 242–252.
- Landis, G. N., & Tower, J., 2005. Superoxide dismutase evolution and life span regulation. *Mechanisms of Ageing and Development*, 126(3), 365–379.

- Marsden, P. A., Schappert, K. T., Chen, H. S., Flowers, M., Sundell, C. L., Wilcox, J. N. *et al.*, 1992. Molecular cloning and characterization of human endothelial nitric oxide synthase. *FEBS Letters*, 307(3), 287–293.
- Mescher, A. L., 2012. *Junqueira's Basic Histology: Text and Atlas*. 12th ed. USA: McGraw-Hill Education.
- Moore, K. L., Dalley, A. F., & Agur, A. M. R., 2010. *Clinically Oriented Anatomy*. 6th ed. Philadelphia: Lippincott Williams & Wilkins.
- Murohara, T., Asahara, T., Silver, M., Bauters, C., Masuda, H., Kalka, C. *et al.*, 1998. Nitric oxide synthase modulates angiogenesis in response to tissue ischemia. *The Journal of Clinical Investigation*, 101(11), 2567–2578.
- Oberley, L. W., 1988. Free radicals and diabetes. *Free Radical Biology & Medicine*, 5(2), 113–124.
- Pacher, P., Nivorozhkin, A., & Szabo, C., 2006. Therapeutic effects of xanthine oxidase inhibitors: renaissance half a century after the discovery of allopurinol. *Pharmacological Reviews*, 58(1), 87–114.
- Park, J.-H., Jin, Y. M., Hwang, S., Cho, D.-H., Kang, D.-H., & Jo, I., 2013. Uric acid attenuates nitric oxide production by decreasing the interaction between endothelial nitric oxide synthase and calmodulin in human umbilical vein endothelial cells: a mechanism for uric acid-induced cardiovascular disease development. *Nitric Oxide : Biology and Chemistry*, 32, 36–42.
- Pea, F., 2005. Pharmacology of drugs for hyperuricemia: Mechanisms, kinetics and interactions. *Contributions to Nephrology*, 147, 35–46.
- Rapoport, R. M., Draznin, M. B., & Murad, F., 1983. Endothelium-dependent relaxation in rat aorta may be mediated through cyclic GMP-dependent protein phosphorylation. *Nature*, 306(5939), 174–176.
- Rathmann, W., Haastert, B., Icks, A., Giani, G., & Roseman, J. M., 2007. Ten-year change in serum uric acid and its relation to changes in other metabolic risk factors in young black and white adults: the CARDIA study. *European Journal of Epidemiology*, 22(7), 439–445.
- Rau, E., Ongkowijaya, J., & Kawengian, V., 2015. Perbandingan Kadar Asam Urat Pada Subyek Obes Dan Non-Obes Di Fakultas Kedokteran Universitas Sam Ratulangi Manado. *E-CliniC*, 3(2).
- Rho, Y. H., Zhu, Y., & Choi, H. K., 2011. The epidemiology of uric acid and fructose. *Seminars in Nephrology*, 31(5), 410–419.
- Riegersperger, M., Covic, A., & Goldsmith, D., 2011. Allopurinol, uric acid, and oxidative stress in cardiorenal disease. *International Urology and Nephrology*, 43(2), 441–449.
- Romi, M. M., Arfian, N., Tranggono, U., Setyaningsih, W. A. W., & Sari, D. C. R., 2017. Uric acid causes kidney injury through inducing fibroblast expansion, Endothelin-1 expression, and inflammation. *BMC Nephrology*, 18(1), 1–8.
- Roth, G. A., Johnson, C., Abajobir, A., Abd-Allah, F., Abera, S. F., Abyu, G. *et al.*, 2017. Global, Regional, and National Burden of Cardiovascular Diseases for 10 Causes, 1990 to 2015. *Journal of the American College of Cardiology*, 70(1), 1–25.
- Sagor, M. A. T., Tabassum, N., Potol, M. A., & Alam, M. A., 2015. Xanthine oxidase inhibitor, allopurinol, prevented oxidative stress, fibrosis, and

- myocardial damage in isoproterenol induced aged rats. *Oxidative Medicine and Cellular Longevity*, 2015.
- Sala, F. A., Wright, G. S. A., Antonyuk, S. V., Garratt, R. C., & Hasnain, S. S., 2019. Molecular recognition and maturation of sod1 by its evolutionarily destabilised cognate chaperone hCCS. *PLoS Biology*, 17(2), 1–22.
- Saladin, K., 2009. *Anatomy & physiology: The unity of form and function*. 5th ed. New York, NY: McGraw-Hill.
- Sanchez-Lozada, L. G., Tapia, E., Lopez-Molina, R., Nepomuceno, T., Soto, V., Avila-Casado, C. *et al.*, 2007. Effects of acute and chronic L-arginine treatment in experimental hyperuricemia. *American Journal of Physiology. Renal Physiology*, 292(4), F1238–44.
- So, A., & Thorens, B., 2010. Uric acid transport and disease. *The Journal of Clinical Investigation*, 120(6), 1791–1799.
- Tousoulis, D., Kampoli, A.-M., Tentolouris, C., Papageorgiou, N., & Stefanadis, C., 2012. The role of nitric oxide on endothelial function. *Current Vascular Pharmacology*, 10(1), 4–18.
- Wang, Y., Branicky, R., Noë, A., & Hekimi, S., 2018. Superoxide dismutases: Dual roles in controlling ROS damage and regulating ROS signaling. *Journal of Cell Biology*, 217(6), 1915–1928.
- Yamamoto, T., 2008. Definition and classification of hyperuricemia. *Nihon rinsho. Japanese journal of clinical medicine*, 66(4), 636–640.
- Yasui, K., & Baba, A., 2006. Therapeutic potential of superoxide dismutase (SOD) for resolution of inflammation. *Inflammation Research : Official Journal of the European Histamine Research Society*, 55(9), 359–363.
- Zajaczkowski, S., Ziółkowski, W., Badtke, P., Zajaczkowski, M. A., Flis, D. J., Figarski, A. *et al.*, 2018. Promising effects of xanthine oxidase inhibition by allopurinol on autonomic heart regulation estimated by heart rate variability (HRV) analysis in rats exposed to hypoxia and hyperoxia. *PLoS ONE*, 13(2), 1–18.
- Zeicher, A. M., Fisslthaler, B., Schray-Utz, B., & Busse, R., 1995. Nitric oxide modulates the expression of monocyte chemoattractant protein 1 in cultured human endothelial cells. *Circulation Research*, 76(6), 980–986.
- Zhang, S., Wang, Y., Cheng, J., Huangfu, N., Zhao, R., Xu, Z. *et al.*, 2019. Hyperuricemia and Cardiovascular Disease. *Current Pharmaceutical Design*, 25(6), 700–709.
- Zhou, Y., Zhao, M., Pu, Z., Xu, G., & Li, X., 2018. Relationship between oxidative stress and inflammation in hyperuricemia: Analysis based on asymptomatic young patients with primary hyperuricemia. *Medicine*, 97(49), 13108.