

DAFTAR PUSTAKA

- Abouelkheir M., ElTantawy DA., Saad MA., Abdelrahman KM., Sobh MA., Lotfy A, et al. 2016. Mesenchymal stem cells versus their conditioned medium in the treatment of cisplatin-induced acute kidney injury: evaluation of efficacy and cellular side effects. *Int J Clin Exp Med*. 9(12):23222-23234.
- Agarwal A, Dong Z, Harris R, Murray P, Parikh SM, Rosner MH, et al. 2016. Cellular and Molecular Mechanisms of AKI. *J Am Soc Nephrol* 27;5:1288-1299.
- Agarwal A., Kumar P., Chowkhary G., Majumdar S., Narang A. 2005. Evaluation of renal functions in asphyxiated newborns. *J Trop Pediatr* 51:295–299.
- Akcaay A., Turkmen K., Lee DW., Edelstein. 2010. Update on the diagnosis and management of acute kidney injury. *Int J Nephrol Renovasc Dis*. 3:129-140.
- Alge JL., and Arthur JM. 2015. Biomarkers of AKI: A Review of Mechanistic Relevance and Potential Therapeutic Implications. *Clin J Am Soc Nephrol* 10(1):147-155.
- Allam MM. 2016. Insulin Like Growth Factor -1(IGF-1) Promotes Angiogenesis and Reverses Ischemia Reperfusion Induced Acute Kidney Injury in Rats: Role of VEGF and TGF- β 1. *Am J Biomed Sci*. 8(2):160-168.
- Andrae J., Gallini R., Betsholtz C. 2008. Role of platelet-derived growth factors in physiology and medicine. *Genes and Development* 22(10):1276–1312.
- Andreoli SP. 2009. Acute kidney injury in children. *Pediatr Nephrol* 24:253–263.
- Angelotti ML., Ronconi E., Ballerini L., Peired A., Mazzinghi B., Sagrinati C., et al. 2012. Characterization of renal progenitors committed toward tubular lineage and their regenerative potential in renal tubular injury. *Stem Cells*. 30(8):1714–1725.
- Arfian N., Vignon-Zellweger N., Nakayama K., Yagi K., Hirata K. 2012. ET-1 deletion from endothelial cells protects the kidney during the extension phase of ischemia/reperfusion injury. *Biochemical and Biophysical Research Communications*. 425(2):443–449.
- Atkinson C., He S., Morris K., Qiao F., Casey S., Goddard M., et al. 2010. Targeted complement inhibitors protect against posttransplant cardiac ischemia and reperfusion injury and reveal an important role for the alternative pathway of complement activation. *J Immunol*. 185:7007-7013.
- Badan Penelitian dan Pengembangan Kesehatan Kementerian Kesehatan RI. Riset Kesehatan Dasar (Riskesdas) 2013.
- Baer PC., Bereiter-Hahn J., Missler C., Brzoska M., Schubert R., Gauer S., et al. 2009. Conditioned medium from renal tubular epithelial cells initiates differentiation of human mesenchymal stem cells. *Cell Prolif* 42:29–37.
- Banaei S. 2015. Novel role of microRNAs in renal ischemia reperfusion injury. *Ren Fail*. 37(7):1073-1079.

- Bancu I, Diaz MN, Serra A, Granada M, Lopez D, Romero R, *et al.* 2016. Low Insulin-Like Growth Factor-1 Level in Obesity Nephropathy: A New Risk Factor? *PLoS One*. 11(5): e0154451.
- Baple, E. L., Chambers, H., Cross, H. E., Fawcett, H., Nakazawa, Y., Chioza, B. A., *et al.* 2014. Hypomorphic PCNA mutation underlies a human DNA repair disorder. *J. Clin. Invest.* 124: 3137-3146.
- Barker N, Rookmaaker MB, Kujala P, Ng A, Leushacke M, Snippert H, *et al.* 2012. Lgr5(+ve) stem/progenitor cells contribute to nephron formation during kidney development. *Cell Rep.* 2(3):540-552.
- Bartholomew A, Sturgeon C and Siatskas M. Mesenchymal Stem Cells Suppress Lymphocyte Proliferation in Vitro and Prolong Skin Graft Survival in Vivo. *Exp Hematol* 2002; 30:42-48.
- Basile DP, Anderson MD, Sutton TA. 2012. Pathophysiology of Acute Kidney Injury. *Compr Physiol.* 2(2):1303–1353.
- Basile DP, Friedrich JL, Spahic J, Knipe N, Mang H, Leonard EC, *et al.* 2011. Impaired endothelial proliferation and mesenchymal transition contribute to vascular rarefaction following acute kidney injury. *Am J Physiol Renal Physiol* 300: F721–F733.
- Berger K, Bangen JM, Hammerich L, Liedtke C, Floege J, Smeets B, *et al.* 2014. Origin of regenerating tubular cells after acute kidney injury. *Proc Natl Acad Sci USA.* 111:1533-1538.
- Berger K, Moeller MJ. 2014. Mechanisms of Epithelial Repair and Regeneration After Acute Kidney Injury. *Semin Nephrol* 34:394-403.
- Bi B, Schmitt R, Israilova M, Nishio H, Cantley LG 2007. Stromal cells protect against acute tubular injury via an endocrine effect. *J Am Soc Nephrol.* 18:2486–2496.
- Bissonnette R, Lee MJ, Wang E. 1990. The differentiation process of intestinal epithelial cells is associated with the appearance of statin, a non-proliferation-specific nuclear protein. *J Cell Sci.* 95:247-255.
- Blazer-Yost BL, Watanabe M, Haverty TP, Ziyadeh FN. 1992. Role of insulin and IGF1 receptors in proliferation of cultured renal proximal tubule cells. *Biochimica et Biophysica Acta.* 1133:329–335.
- Bonventre JV. 2003. Dedifferentiation and proliferation of surviving epithelial cells in acute renal failure. *J Am Soc Nephrol* 14:855–861.
- Bonventre JV, Yang L. 2011. Cellular pathophysiology of ischemic acute kidney injury. *J Clin Invest.* 121(11):4210–4221.
- Bonventre JV, Zuk A. 2004. Ischemic acute renal failure: an inflammatory disease? *Kidney Int.* 66(2):480–485.
- Bossolasco P, Cova L, Calzarossa C, Rimoldi SG, Borsotti C, Delilieri GL, *et al.* 2005. Neuro-glial differentiation of human bone marrow stem cells in vitro. *Exp Neurol.* 193(2):312-325.
- Brivet FG, Kleinknecht DJ, Loirat P, Landais PJ. 1996. Acute renal failure in intensive care units – causes, outcomes and prognostic factors of hospital mortality: a prospective multicenter study. *Crit Care Med*;24:192–198.

- Brodsky SV, Yamamoto T, Tada T, *et al.* 2002. Endothelial dysfunction in ischemic acute renal failure: rescue by transplanted endothelial cells. *Am. J. Physiol.* 282;6:F1140–F1149.
- Bruno S, Grange C, Deregibus MC, Calogero RA, Saviozzi S, Collino F, *et al.* 2009. Mesenchymal Stem Cell-Derived Microvesicles Protect Against Acute Tubular Injury. *J Am Soc Nephrol.* 20(5):1053–1067.
- Caisey, J. D. and D. J. King. 1980. Clinical chemistry values for some common laboratory animals. *Clin. Chem.* 26(13):1877-1879.
- Cantaluppi V, Quercia AD, Dellepiane S, Ferrario S, Camussi G, Biancone L. 2014. Interaction between systemic inflammation and renal tubular epithelial cells. *Nephrol Dial Transplant.* 29(11):2004-2011
- Cantinieux D, Quertainmont R, Blacher S, Rossi L, Wanet T, Noël A, *et al.* Conditioned Medium from Bone Marrow-Derived Mesenchymal Stem Cells Improves Recovery after Spinal Cord Injury in Rats: An Original Strategy to Avoid Cell Transplantation. *PLoS One.* 2013; 8(8): e69515.
- Cao, Z., Cooper ME, Wu LL, Cox AJ, Jandeleit-Dahm K, Kelly DJ, *et al.* 2000. Blockade of the Renin-Angiotensin and Endothelin Systems on Progressive Renal Injury. *Hypertension* 36:561-568.
- Caplan AI and Dennis JE. Mesenchymal Stem Cells as Trophic Mediators. *J Cell Biochem* 2006; 5:1076-84.
- Cao Z, Kelly DJ, Cox A, Casley D, Forbes JM, Martinello P, *et al.* 2000. Angiotensin type 2 receptor is expressed in the adult rat kidney and promotes cellular proliferation and apoptosis. *Kidney International.* 58;2437–2451.
- Carden DL, Granger DN. 2000. Pathophysiology of ischaemia-reperfusion injury. *J Pathol*;190:255-266.
- Chen C, Hou J. 2016. Mesenchymal stem cell-based therapy in kidney transplantation. *Stem Cell Research & Therapy* 7:16.
- Chen F, Date H. 2015. Update on ischemia-reperfusion injury in lung transplantation. *Curr Opin Organ Transplant.* 20(5):515-20.
- Chen J, Chen JK, Harris RC. 2012. Deletion of the epidermal growth factor receptor in renal proximal tubule epithelial cells delays recovery from acute kidney injury. *Kidney Int* 82; 45-52.
- Chen J, Li Y, Hao H, Li C, Du Y, Hu Y, *et al.* 2015. Mesenchymal Stem Cell Conditioned Medium Promotes Proliferation and Migration of Alveolar Epithelial Cells under Septic Conditions In Vitro via the JNK-P38 Signaling Pathway. *Cell Physiol Biochem* 37(5):1830-1846.
- Choudhury D. 2010. Acute kidney injury: current perspectives. *Postgrad Med.* 2010;122(6):29-40.
- Chertow GM, Burdick E, Honour M, Bonventre JV, Bates DW. 2005. Acute kidney injury, mortality, length of stay, and costs in hospitalized patients. *J Am Soc Nephrol* 16(11): 3365-3370.
- Collard CD, Gelman S. 2001. Pathophysiology, clinical manifestations, and prevention of ischemia-reperfusion injury. *Anesthesiology.* 94(6):1133-8.

- Cox ZL, McCoy AB, Matheny ME, Bhavé G, Peterson NB, Siew ED, et al. 2013. Adverse drug events during AKI and its recovery. *Clin J Am Soc Nephrol* 8(7):1070-8.
- Crocker J. 1989. Nucleolar organiser regions. In *Current Topics in Pathology: Nuclear Pathology*, (edited by Underwood JCE). Berlin: Springer Verlag.
- Daemen MA, van de Ven MW, Heineman E, Buurman WA. 1999. Involvement of endogenous interleukin-10 and tumor necrosis factor-alpha in renal ischemia-reperfusion injury. *Transplantation* 67:792–800.
- da Silveira KD, Pompermayer Bosco KS, Diniz LR, Carmona AK, Cassali GD, Bruna-Romero O, et al. 2010. ACE2-angiotensin-(1-7)-Mas axis in renal ischaemia/reperfusion injury in rats. *Clin Sci (Lond)*. 119(9):385–394.
- De Almeida DC, Donizetti-Oliveira C, Barbosa-Costa P, Origassa CST, Câmara NOS. 2013. In Search of Mechanisms Associated with Mesenchymal Stem Cell-Based Therapies for Acute Kidney Injury. *Clin Biochem Rev* 34:131-144.
- de Chiara A, Pederzoli-Ribeil M, Burgel PR, Danel C, Witko-Sarsat V. 2012. Targeting cytosolic proliferating cell nuclear antigen in neutrophil-dominated inflammation. *Front Immunol*. 3: 311.
- de Vries DK, Schaapherder AF, Reinders ME. 2012. Mesenchymal stromal cells in renal ischemia/reperfusion injury. *Front Immunol*; 3:162.
- Deng J, Hu X, Yuen PST, Star RA. 2004. α -melanocyte-stimulating hormone inhibits lung injury after renal ischemia/reperfusion. *American Journal of Respiratory and Critical Care Medicine*. 169;6:749–756.
- Deng J, Kohda Y, Chiao H, Wang Y, Hu X, Hewitt SM, et al. 2001. Interleukin-10 inhibits ischemic and cisplatin-induced acute renal injury. *Kidney Int* 60: 2118–2128.
- Devarajan P. 2006. Update on Mechanisms of Ischemic Acute Kidney Injury. *J Am Soc Nephrol* 17(6):1503–1520.
- Devarajan P, Mishra J, Supavekin S, Patterson LT, Potter SS. 2003. Gene expression in early ischemic renal injury: Clues towards pathogenesis, biomarker discovery, and novel therapeutics. *Mol Genet Metab* 80:365–376.
- Donnahoo KK, Meng X, Ayala A, Cain MP, Harken AH, Meldrum DR. 1999. Early kidney TNF-alpha expression mediates neutrophil infiltration and injury after renal ischemia-reperfusion. *Am J Physiol*. 277(3 Pt 2):R922-9.
- Eltzschig HK, Eckle T. 2011. Ischemia and reperfusion - from mechanism to translation. *Nat Med* 17:1391-1401.
- Fahmy SR, Soliman AM, Ansary ME, Elhamid SA, Mohsen H. 2017. Therapeutic efficacy of human umbilical cord mesenchymal stem cells transplantation against renal ischemia/reperfusion injury in rats. *Tissue and Cell*. Article in Press. <https://doi.org/10.1016/j.tice.2017.04.006>.
- Faleo G, Neto JS, Kohmoto J, Tomiyama K, Shimizu H, Takahashi T, et al. 2008. Carbon monoxide ameliorates renal cold ischemia-reperfusion injury with an upregulation of vascular endothelial growth factor by activation of hypoxia-inducible factor. *Transplantation* 85: 1833–1840.

- Feng DQ, Zhou Y, Ling B, Gao T, Wei HM, Tian ZG. 2008. Effect of conditioned medium of mesenchymal stem cells on the in vitro maturation and subsequent development of mouse oocyte. *Braz J Med Biol Res.* 41:978-985.
- Floege J, Burns MW, Alpers CE, Yoshimura A, Pritzl P, Gordon K, *et al.* 1992. Glomerular cell proliferation and PDGF expression precede glomerulosclerosis in the remnant kidney model. *Kidney International.* 41:297—309.
- Frank A, Bonney M, Bonney S, Weitzel L, Koeppen M, Eckle T. 2012. Myocardial ischemia reperfusion injury: from basic science to clinical bedside. *Semin Cardiothorac Vasc Anesth* 16(3):123-132.
- Fujihara M, Uemasu J, Kawasaki H. 1996. Serum and urinary levels of insulin-like growth factor I in patients with chronic renal disease and diabetes mellitus: its clinical implication. *Clin Nephrol.* 45(6):372-8.
- Fukuoka H, Suga H. 2015. Hair Regeneration Treatment Using Adipose-Derived Stem Cell Conditioned Medium: Follow-up With Trichograms. *Eplasty.* 26;15:e10. eCollection 2015.
- Fukuoka, H. Suga, K. Narita, R. Watanabe, S. Shintani. 2012. The latest advance in hair regeneration therapy using proteins secreted by adipose-derived stem cells. *American Journal of Cosmetic Surgery.* 29(4):273–282.
- Gentle ME, Shi S, Daehn I, Zhang T, Qi H, Yu L, *et al.* 2013. Epithelial cell TGF- β signaling indices acute tubular injury and interstitial inflammation. *J Am Soc Nephrol* 24; 787-799.
- Gerlach E, Deuticke B, Dreisbach RH, Rosarius CW. 1963. [On the behavior of nucleotides and their dephosphorylation degradation products in the kidney in ischemia and short-term postischemic re-establishment of blood circulation]. *Pflugers Arch.* 278:296-315.
- Gewin L, Vadivelu S, Neelisetty S, Srichai MB, Pauksakon P, Pozzi A, *et al.* 2012. Deleting the TGF- β receptor attenuates acute proximal tubule injury. *J Am Soc Nephrol* 23; 2001-2011.
- Giachelli CM, Pichler R, Lombardi D, Denhardt DT, Alpers CE, Schwartz SM, *et al.* 1994. Osteopontin expression in angiotensin II-induced tubulointerstitial nephritis. *Kidney Int* 45:515–524.
- Godet C, Goujon JM, Petit I, Lecron JC, Hauet T, Mauco G, *et al.* 2006. Endotoxin tolerance enhances interleukin-10 renal expression and decreases ischemia-reperfusion renal injury in rats. *Shock* 25: 384– 388.
- Goldberg R, Dennen P. 2008. Long-term outcomes of acute kidney injury. *Adv Chronic Kidney Dis.* 15(3):297-307.
- Haase VH. Hypoxia-inducible factors in the kidney. 2006. *Am J Physiol Renal Physiol.* 291:F271–F281.
- Hall PA, Levison DA. 1990. Review: assessment of cell proliferation in histological material. *J Clin Pathol.* 43;184-92.
- Hammerman MR. 1995. Growth factors in renal development. *Semin Nephrol* 15: 291–299.
- Hammerman MR. 2000. Recapitulation of phylogeny by ontogeny in nephrology. *Kidney Int* 57:742–755.

- Hammerman MR, Miller SB. 1994. Therapeutic use of growth factors in renal failure. *J Am Soc Nephrol* 5: 1–11.
- Hammerman MR, Safirstein R, Harris RC, Toback FG, Humes HD. 2000. Acute renal failure. III. The role of growth factors in the process of renal regeneration and repair. *Am J Physiol Renal Physiol* 279: F3–F11.
- Herrera MB, Bussolati B, Bruno S, Fonsato V, Romanazzi GM, Camussi G. 2004. Mesenchymal stem cells contribute to the renal repair of acute tubular epithelial injury. *Int J Mol Med* 14:1035-1041.
- Herrera MB, Bussolati B, Bruno S, Morando L, Mauriello-Romanazzi G, Sanavio F, et al. 2007. Exogenous mesenchymal stem cells localize to the kidney by means of CD44 following acute tubular injury. *Kidney Int* 72: 430–441.
- Hirschberg R. 1996. Insulin-like growth factor I in the kidney. *Miner Electrolyte Metab.* 22(1-3):128-32.
- Hoste EA, Schurgers M. 2008. Epidemiology of acute kidney injury: how big is the problem? *Crit Care Med.* 36(4 Suppl):S146-51.
- Hou SH, Bushinsky DA, Wish JB, Cohen JJ, Harrington JT. Hospital-acquired renal insufficiency: a prospective study. *Am J Med* 1983;74(2):243–248.
- Hsu CY, McCulloch CE, Fan D, Ordoñez JD, Chertow GM, Go AS. 2007. Community-based incidence of acute renal failure. *Kidney Int*;72(2):208–212.
- Humes D, Cieslinski DA, Coimbra TM, Messana JM, Galvao C. 1989. Epidermal growth factor enhances renal tubule cell regeneration and repair and accelerates the recovery of renal function in postischemic acute renal failure. *The Journal of Clinical Investigation.* 84:1757–1761.
- Humphreys BD. 2014. Kidney Injury, Stem Cells and Regeneration. *Curr Opin Nephrol Hypertens.* 23(1):25–31.
- Humphreys BD, Bonventre JV. 2008. Mesenchymal Stem Cells in Acute Kidney Injury. *Annu Rev Med* 59:311-25.
- Imamura R, Moriyama T, Isaka Y, et al. 2007. Erythropoietin protects the kidneys against ischemia reperfusion injury by activating hypoxia inducible factor-1alpha. *Transplantation.* 83:1371–9.
- Ishizuka S, Yano T, Hagiwara K, Sone M, Nihei H, Ozasa H, et al. 1999. Extracellular Signal-Regulated Kinase Mediates Renal Regeneration in Rats with Myoglobinuric Acute Renal Injury. *Biochemical and Biophysical Research Communications.* 254:88–92.
- Jang HR, Park JH, Kwon GY, Lee JE, Huh W, Jin HJ, et al. 2014. Effect of preemptive treatment with human umbilical cord blood-derived mesenchymal stem cells on the development of renal ischemia-reperfusion injury in mice. *Am J Physiol Renal Physiol.* 307(10):F1149-61.
- Joon-Sung P, Chor HJ, Sua K, Gheun-Ho K, 2012. Acute and chronic effects of dietary sodium restriction on renal tubulointerstitial fibrosis in Cisplatin-Treated Rats. *Nephrol Dial Transplant.* 0:1-10.
- Kalogeris T, Baines CP, Krenz M, Korthuis RJ. 2012. Cell Biology of Ischemia/Reperfusion Injury. *Int Rev Cell Mol Biol*;298:229–317.
- Kalogeris, Baines CP, Krenz M, Korthuis RJ. 2017. Ischemia/Reperfusion. *Compr Physiol* 7:113-170.

- Kaushal GP, Shah SV. 2014. Challenges and Advances in the Treatment of AKI. *J Am Soc Nephrol* 25:877–883.
- Kee JL. *Pedoman Pemeriksaan Laboratorium dan Diagnostik*. Edisi 6. EGC. Jakarta. Cetakan I: 2008.
- Kellum JA, Hoste EA. 2008. Acute kidney injury: epidemiology and assessment. *Scand J Clin Lab Invest Suppl.* 241:6-11.
- Kellum JA, Unruh ML, Murugan R. 2011. Acute kidney injury. *Clinical Evidence*; 03:2001.
- Kelly KJ, Baird NR, Greene AL. 2001. Induction of stress response proteins and experimental renal ischemia/reperfusion. *Kidney Int.* 59(5):1798-1802.
- Kim J, Jung KJ, Park KM. 2010. Reactive oxygen species differently regulate renal tubular epithelial and interstitial cell proliferation after ischemia and reperfusion injury. *Am J Physiol Renal Physiol* 298: F1118–F1129.
- Kim K, Park BH, Ihm H, Kim KM, Jeong J, Chang JW, *et al.* 2011. Expression of stem cell marker CD133 in fetal and adult human kidneys and pauci-immune crescentic glomerulonephritis. *Histol Histopathol.* 26(2):223–232.
- Kode JA, Mukherjee S, Joglekar MV, Hardikar AA. 2009. Mesenchymal stem cells: immunobiology and role in immunomodulation and tissue regeneration. *Cytotherapy* 11(4):377-391.
- Koken T, Serteser M, Kahraman A, Akbulut G, Dilek ON. 2004. Which is more effective in the prevention of renal ischemia-reperfusion-induced oxidative injury in the early period in mice: Interleukin (IL)-10 or anti-IL-12? *Clin Biochem* 37: 50– 55.
- Kovacs J, Gomba S. 1998. Analysis of the role of apoptosis and cell proliferation in renal cystic disorders. *Kidney Blood Press Res* 21:325–328.
- Kurata H, Takaoka M, Kubo Y, Katayama T, Tsutsui H, Takayama J, *et al.* 2005. Protective effect of nitric oxide on ischemia/reperfusion-induced renal injury and endothelin-1 overproduction. *Eur J Pharmacol.* 517(3):232–239.
- Kwon O, Hong SM, Ramesh G. 2009. Diminished NO generation by injured endothelium and loss of macula densa nNOS may contribute to sustained acute kidney injury after ischemia-reperfusion. *Am J Physiol Renal Physiol.* 296(1):F25–F33.
- Laqif, A. 2015. *Kajian Terapi Media Terkondisi Sel Punca Mesenkimal (MT-SPM) Selaput Amnion pada Kasus Kegagalan Ovarium Prematur (Penelitian pada Hewan Coba Tikus Sprague-Dawley)*. Disertasi. Program Doktor Ilmu Kedokteran dan Kesehatan Fakultas Kedokteran Universitas Gadjah Mada. Yogyakarta.
- Lee S, Huen S, Nishio H, Nishio S, Lee HK, Choi BS, *et al.* 2011. Distinct macrophage phenotypes contribute to kidney injury and repair. *J Am Soc Nephrol.* 22(2):317–326.
- Lemos FB, Ijzermans JN, Zondervan PE, Peeters AM, van den Engel S, Mol WM, *et al.* 2003. Differential expression of heme oxygenase-1 and vascular endothelial growth factor in cadaveric and living donor kidneys after ischemia-reperfusion. *J Am Soc Nephrol* 14: 3278– 3287.

- Leventhal JS, Schroppel B. 2012. Toll-like receptors in transplantation: sensing and reacting to injury. *Kidney Int*; 81:826-832.
- Levy BI, Benessiano J, Henrion D, Caputo L, Heymes C, Duriez M, *et al.* 1996. Chronic blockade of AT2-subtype receptors prevents the effect of angiotensin II on the rat vascular structure. *J Clin Invest* 98:418-425.
- Liano F, Pascual J, Madrid Acute Renal Failure Study Group. 1996. Epidemiology of acute renal failure: a prospective, multicenter study community-based study. *Kidney Int*; 50:811-818.
- Lindgren D, Bostrom AK, Nilsson K, Hansson J, Sjölund J, Möller C, *et al.* 2011. Isolation and characterization of progenitor-like cells from human renal proximal tubules. *Am J Pathol.* 178(2):828-837.
- Lin KC, Yip HK, Shao PL, Wu SC, Chen KH, Chen YT, *et al.* 2016. Combination of adipose-derived mesenchymal stem cells (ADMSC) and ADMSC-derived exosomes for protecting kidney from acute ischemia-reperfusion injury. *International Journal of Cardiology* 216:173-185.
- Litwack G. 2008. Growth factors and cytokines. In: Human Biochemistry and Disease, G. Litwack, Ed., pp. 587-683, Elsevier Academic Press.
- Liu Y. Hepatocyte growth factor and the kidney. 2002. *Curr Opin Nephrol Hypertens.* 11:23-30.
- Loverre A, Capobianco C, Ditonno P, Battaglia M, Grandaliano G, Schena FP. 2008. Increase of proliferating renal progenitor cells in acute tubular necrosis underlying delayed graft function. *Transplantation* 85(8):1112-1119.
- Lu CY, Winterberg PD, Chen J, Hartono JR. 2012. Acute kidney injury: a conspiracy of toll-like receptor 4 on endothelia, leukocytes, and tubules. *Pediatr Nephrol*;27(10):1847-1854.
- Ma S, Xie N, Li W, Yuan B, Shi Y, Wang Y. 2014. Immunobiology of mesenchymal stem cells. *Cell Death Differ.* 21(2):216-225.
- Maga G, Hubscher U. 2003. Proliferating cell nuclear antigen (PCNA): a dancer with many partners. *J Cell Sci.* 116(Pt 15):3051-3060.
- Mancini A, Koch A, Whetton AD, Tamura T. 2004. The M-CSF receptor substrate and interacting protein FMIP is governed in its subcellular localization by protein kinase C-mediated phosphorylation, and thereby potentiates M-CSF-mediated differentiation. *Oncogene.* 23(39): 6581-6589.
- Martensson J, Martling CR, Bell M. 2012. Novel biomarkers of acute kidney injury and failure: clinical applicability. *Br J Anaesth* 109(6):843-850.
- McKay DB. 2011. The role of innate immunity in donor organ procurement. *Semin Immunopathol* 33:169-184.
- Mehta, R.L., Kellum, J.A., Shah, S.V., Molitoris, B.A., Ronco, C., Warnock, D.G., *et al.* 2007. Acute Kidney Injury Network: report of an initiative to improve outcomes in acute kidney injury. *Crit Care.* 11(2):R31.
- Meirelles Lda S, Fontes AM, Covas DT, Caplan AI. 2009. Mechanisms involved in the therapeutic properties of mesenchymal stem cells. *Cytokine Growth Factor Rev.* 20(5-6):419-427.

- Mishra J, Mori K, Ma Q, Kelly C, Barasch J, Devarajan P. 2004. Neutrophil gelatinase-associated lipocalin (NGAL): A novel urinary biomarker for cisplatin nephrotoxicity. *Am J Nephrol* 24:307–315.
- Mishra J, Mori K, Ma Q, Kelly C, Yang J, Mitsnefes M, Barasch J Devarajan P: Amelioration of ischemic acute renal injury by neutrophil gelatinase-associated lipocalin. *J Am Soc Nephrol* 15 : 3073–3082, 2004b.
- Mishra J, Qing M, Prada A, Zahedi K, Yang Y, Barasch J, *et al.* 2003. Identification of NGAL as a novel early urinary marker for ischemic renal injury. *J Am Soc Nephrol* 14:2534–2543.
- Moghadasali R, Mutsaers HAM, Azarnia M, Aghdami N, Baharvand H, Torensma R, *et al.* 2013. Mesenchymal stem cell-conditioned medium accelerates regeneration of human renal proximal tubule epithelial cells after gentamicin toxicity. *Experimental and Toxicologic Pathology* 65(5):595–600.
- Miyachi K, Fritzler MJ, Tan EM. 1978. Autoantibody to a nuclear antigen in proliferating cells. *J Immunol.* 121(6):2228-2234.
- Moghal NE, Brocklebank JT, Meadow SR. 1998. A review of acute renal failure in children: incidence, etiology and outcome. *Clin Nephrol* 49:91–95.
- Moldovan GL, Pfander B, Jentsch S. 2007. PCNA, the maestro of the replication fork. *Cell.* 129(4):665-679.
- Mori K, Lee HT, Rapoport D, Drexler I, Foster K, Yang J, *et al.* 2005. Endocytic delivery of lipocalin-siderophore-iron complex rescues the kidney from ischemia-reperfusion injury. *J Clin Invest* 115 : 610–621.
- Morigi M, Imberti B, Zoja C, Corna D, Tomasoni S, Abbate M, *et al.* 2004. Mesenchymal stem cells are renotropic, helping to repair the kidney and improve function in acute renal failure. *J Am Soc Nephrol* 15:1794–1804.
- Morigi M, Inrona M, Imberti B, Corna D, Abbate M, Rota C, *et al.* 2008. Human bone marrow-mesenchymal stem cells accelerate recovery of acute renal injury and prolong survival in mice. *Stem Cells* 26:2075–2082.
- Naryzhny SN. 2008. Proliferating cell nuclear antigen: a proteomics view. *Cell Mol Life Sci* 65(23):3789-3808.
- National Kidney Foundation. 2015. Glomerular Filtration Rate (GFR). (Cited 31 May 2017) Available from URL: <https://www.kidney.org/atoz/content/gfr>
- Nissenson AR. 1998. Acute renal failure: definition and pathogenesis. *Kidney Int Suppl* 66:7–10.
- Nony PA, Schnellmann RG. 2003. Mechanisms of renal cell repair and regeneration after acute renal failure. *J Pharmacol Exp Ther* 304: 905–912.
- Norman J, Badie-Dezfooly B, Nord EP, Kurtz I, Schlosser J, Chaudhari A, *et al.* 1987. EGF induced mitogenesis in proximal tubular cells: potentiation by angiotensin II. *Am J Physiol Renal Physiol.* 253:F299–F309.
- Oberbauer R, Schwarz C, Regele HM, Hansmann C, Meyer TW, Mayer G. 2001. Regulation of renal tubular cell apoptosis and proliferation after ischemic injury to a solitary kidney. *J Lab Clin Med* 138:343-351.

- Padanilam BJ. 2003. Cell death induced by acute renal injury: a perspective on the contributions of apoptosis and necrosis. *Am J Physiol Renal Physiol* 284: F608–F627.
- Park BS, Kim WS, Choi JS, Kim HK, Won JH, Ohkubo F, *et al.* 2010. Hair growth stimulated by conditioned medium of adipose-derived stem cells is enhanced by hypoxia: evidence of increased growth factor secretion. *Biomed Res.* 31(1):27-34.
- Park JE, Chen HH, Winer J, Houck KA, Ferrara N. 1994. Placenta growth factor: potentiation of vascular endothelial growth factor bioactivity, in vitro and in vivo, and high affinity binding to Flt-1 but not to Flk-1/KDR. *J Biol Chem* 269(41):25646–25654.
- Patschan D, Muller GA. 2015. Acute kidney injury. *J Inj Violence Res* 7(1):19-26.
- Patschan D, Patschan S, Muller GA. 2012. Inflammation and Microvasculopathy in Renal Ischemia Reperfusion Injury. *Journal of Transplantation.* 1-7. Article ID 764154. doi:10.1155/2012/764154.
- Pawitan, J.A., 2014. Prospect of Stem Cell Conditioned Medium in Regenerative Medicine. *BioMed Research International* [<http://dx.doi.org/10.1155/2014/965849>] [cited 2017 May 24]. Available from: URL: <https://www.hindawi.com/journals/bmri/2014/965849/cta/>
- Pittenger MF, Mackay AM, Beck SC, Jaiswal RK, Douglas R, Mosca JD, *et al.* 1999. Multilineage potential of adult human mesenchymal stem cells. *Science.* 284(5411):143-147.
- Prelich G, Tan CK, Kostura M, Mathews MB, So AG, Downey KM, *et al.* 1987. Functional identity of proliferating cell nuclear antigen and a DNA polymerase-delta auxiliary protein. *Nature* 326(6112):517-520.
- Pressly JD, Park F. 2017. DNA repair in ischemic acute kidney injury. *Am J Physiol Renal Physiol* 312: F551–F555.
- Prockop, DJ. 1997. Marrow stromal cells as stem cells for nonhematopoietic tissues. *Science* 276 (5309) 71- 74.
- Rachmadi D. 2011. *Gangguan Ginjal Akut (GnGA)*. Seminar/ Workshop Nefrologi IDAI cabang Kaltim, Hotel Aston, Balikpapan.
- Rahman M, Shad F, Smith MC. 2012. Acute Kidney Injury: A Guide to Diagnosis and Management. *Am Fam Physician.* 86(7):631-639.
- Ranghino A, Bruno S, Bussolati B, Moggio A, Dimuccio V, Tapparo M, *et al.* 2017. The effects of glomerular and tubular renal progenitors and derived extracellular vesicles on recovery from acute kidney injury. *Stem Cell Research & Therapy.* 8:24.
- Rantam FA, Ferdiansyah, Purwati. 2014. *Stem Cell Mesenchymal, Hematopoetik, dan Model Aplikasi*. Edisi Kedua. Airlangga Univerity Press. 3:45-56.
- Rastegar F, Shenaq D, Huang J, Zhang W, Zhang BQ, He BC, *et al.* 2010. Mesenchymal stem cells: Molecular characteristics and clinical applications. *World J Stem Cells.* 2(4):67-80.
- Ray P, Devaux Y, Stolz DB, Yarlagadda M, Watkins SC, Lu Y, *et al.* 2003. Inducible expression of keratinocyte growth factor (KGF) in mice inhibits lung epithelial cell death induced by hyperoxia. *Proc Natl Acad Sci USA.* 100(10):6098-6103.

- Rennke HG. 1986. Structural alterations associated with glomerular hyperfiltration, in *The Progressive Nature of Renal Disease*, edited by Mitch WE, Brenner BM, Stein JH, New York, Churchill Livingstone. pp. 111—131.
- Rennke HG, Klein PS. 1989. Pathogenesis and significance of nonprimary focal and segmental glomerulosclerosis. *J Kidney Dis* 13:443—456.
- Ricci, Z., Cruz, D.N., Ronco, C., 2011. Classification and staging of acute kidney injury: beyond the RIFLE and AKIN criteria. *Nat Rev Nephrol.* 7:201-208.
- Ricklin D, Hajishengallis G, Yang K, Lambris JD. 2010. Complement: a key system for immune surveillance and homeostasis. *Nat Immunol* 11:785-797.
- Rock KL, Latz E, Ontiveros F, Kono H. The sterile inflammatory response. *Annu Rev Immunol* 2010; 28:321-342.
- Rosenbaum AJ, Grande DA, Dines JS. 2008. The use of mesenchymal stem cells in tissue engineering: A global assessment. *Organogenesis.* 4(1):23-7.
- Safirstein R. 1994. Gene expression in nephrotoxic and ischemic acute renal failure. *J Am Soc Nephrol* 4: 1387–1395.
- Sahu KM, Mukhiya GK, Begum F, Ahmed MT, Ashrafee FAS, Alallah MM, *et al.* 2012. Repair and recovery of acute kidney injury. *Clinical Queries: Nephrology* 0101;95–98.
- Schmitt R, Cantley LG. 2008. The impact of aging on kidney repair. *Am J Physiol Renal Physiol* 294: F1265–F1272.
- Serfilippi LM, Pallman DRS, Russell B, Spainhour CB. Serum Clinical Chemistry and Hematology Reference Values in Outbred Stocks of Albino Mice from Three Commonly Used Vendors and Two Inbred Strains of Albino Mice. *Contemporary Topics.* 2003. American Association for Laboratory Animal Science. 42(3):46-52.
- Sharpley EJ, Thiernemann C, Yaqoob MM. 2005. Mechanisms of disease: cell death in acute renal failure and emerging evidence for a protective role of erythropoietin. *Nat Clin Pract Nephrol.* 1:87–97.
- Si YL, Zhao YL, Hao HJ, Fu XB, Han WD. 2011. MSCs: Biological characteristics, clinical applications and their outstanding concerns. *Ageing Research Reviews* 10(1):93–103.
- Siedlecki A, Irish W, Brennan DC. 2011. Delayed graft function in the kidney transplant. *Am J Transplant* 11:2279-2296.
- Siew ED, Davenport A. 2015. The growth of acute kidney injury: a rising tide or just closer attention to detail? *Kidney International* 87, 46–61.
- Sirota JC, Klawitter J, Edelstein CL. Biomarkers of Acute Kidney Injury. *Journal of Toxicology.* Volume 2011. Article ID 328120. [cited 2017 May 29] Available from: URL: <https://www.hindawi.com/journals/jt/2011/328120/ref/>
- Smeets B, Boor P, Dijkman H, Sharma SV, Jirak P, Mooren F, *et al.* 2013. Proximal tubular cells contain a phenotypically distinct, scattered cell population involved in tubular regeneration. *J Pathol.* 229:645-59.

- Sotiropoulou PA, Perez SA, Gritzapis AD, Baxevanis CN, Papamichail M. 2006. Interactions between human mesenchymal stem cells and natural killer cells. *Stem Cells*. 24(1):74-85.
- Souidi N, Stolk M, Seifert M. 2013. Ischemia-reperfusion injury: beneficial effects of mesenchymal stromal cells. *Curr Opin Organ Transplant* 18(1):34-43.
- Spaggiari GM, Capobianco A, Becchetti S, Mingari MC, Moretta L. 2006. Mesenchymal stem cell-natural killer cell interactions: evidence that activated NK cells are capable of killing MSCs, whereas MSCs can inhibit IL-2-induced NK-cell proliferation. *Blood*. 107(4):1484-90.
- StataCorp. 2011. *Stata Statistical Software: Release 12*. College Station, TX: StataCorp LP.
- Stelter, P., Ulrich, H. D. 2003. Control of spontaneous and damage-induced mutagenesis by SUMO and ubiquitin conjugation. *Nature* 425:188-191.
- Stoimenov I, Helleday T. 2009. PCNA on the crossroad of cancer. *Biochem Soc Trans*. 37(Pt 3):605-13.
- Stoimenov, I ; Helleday, T. PCNA (proliferating cell nuclear antigen). Atlas Genet Cytogenet Oncol Haematol. 2012;16(3):208-211. [cited 2017 May 24] Available from: <http://atlasgeneticsoncology.org/Genes/PCNAID41670ch20p12.html> on 27 Feb 2017. URL:
- Sulistiyorini N. WORLD KIDNEY DAY 9 March 2017 “Kidney Disease and Obesity : Healthy Lifestyle for Healthy Kidneys”. 13 March 2017. Available from: <http://www.dinkesjatengprov.go.id/v2015/index.php/39-rokcontent/frontpage/376-ginjal> Accessed at 12 June 2017.
- Sutton TA, Fisher CJ, Molitoris BA. 2002. Microvascular endothelial injury and dysfunction during ischemic acute renal failure. *Kidney Int*. 62(5):1539-1549.
- Sze SK, de Kleijn DP, Lai RC, Khia Way Tan E, Zhao H, Yeo KS, *et al*. 2007. Elucidating the secretion proteome of human embryonic stem cell-derived mesenchymal stem cells. *Mol Cell Proteomics*. 6(10):1680-9.
- Tan CK, Castillo C, So AG, Downey KM. 1986. An auxiliary protein for DNA polymerase-delta from fetal calf thymus. *J Biol Chem*. 15;261(26):12310-6.
- Tan HL, Yap JQ, Qian Q. 2016. Acute kidney injury: tubular markers and risk for chronic kidney disease and end-stage kidney failure. *Blood Purif* 41:144-150.
- Tanaka H, Terada Y, Kobayashi T, Okado T, Inoshita S, Kuwahara M, *et al*. 2004. Expression and function of Ets-1 during experimental acute renal failure in rats. *J Am Soc Nephrol* 15:3083-3092.
- Terada Y, Tanaka H, Sasaki S. 2005. Wnt-4 and Ets-1 signaling pathways for regeneration after acute renal failure. *Kidney Int* 68:1969.
- Timmers L, Lim SK, Hofer IE, Arslan F, Lai RC, van Oorschot AAM, *et al*. 2011. Human mesenchymal stem cell-conditioned medium improves

- cardiac function following myocardial infarction. *Stem Cell Research* 6:206–214.
- Timmers L, Lim SK, Arslan F, Armstrong JS, Hoefler IE, Doevendans PA, *et al.* 2007. Reduction of myocardial infarct size by human mesenchymal stem cell conditioned medium. *Stem Cell Res.* 1, 129-137.
- Travali, S., Ku, D.-H., Rizzo, M. G., Ottavio, L., Baserga, R., Calabretta, B. 1989. Structure of the human gene for the proliferating cell nuclear antigen. *J Biol Chem.* 264:7466-7472.
- Uccelli A, Moretta L, Pistoia V. 2008. Mesenchymal stem cells in health and disease. *Nature*;8:726-736.
- Uchida S, Endou H. Substrate specificity to maintain cellular ATP along the mouse nephron. *Am J Physiol.* 1988; 255:F977-83.
- UNDP Indonesia. 2015. *Konvergensi Agenda Pembangunan Nawa Cita, RPJMN, dan SDGs.*
- Wagner W, Wein F, Seckinger A, Frankhauser M, Wirkner U, Krause U, *et al.* 2005. Comparative characteristics of mesenchymal stem cells from human bone marrow, adipose tissue, and umbilical cord blood. *Exp Hematol.* 33(11):1402-1416.
- Wahyono D, Hakim AR, Nugroho AE. 2007. Profile of sulphacetamide pharmacokinetics on uranyl nitrate-induced renal failure rats. *Majalah Farmasi Indonesia* 18(3): 117–123.
- Waikar SS, Bonventre JV. 2009. Creatinine Kinetics and the Definition of Acute Kidney Injury. *J Am Soc Nephrol.* 20(3):672–679.
- Wang E, Krueger JG. 1985. Application of a unique monoclonal antibody as a marker for non-proliferating subpopulations of cells of some tissues. *J Histochem Cytochem.* 33;587-94.
- Wei Q, Dong Z. Mouse model of ischemic acute kidney injury: technical notes and tricks. *Am J Physiol Renal Physiol.* 2012 Dec 1; 303(11): F1487–F1494.
- Wei X, Yang X, Han Z, Qu F, Shao L, Shi Y. 2013. Mesenchymal stem cells anew trend for cell therapy. 34:747-754.
- Witzgall R, Brown D, Schwarz C, Bonventre JV. 1994. Localization of proliferating cell nuclear antigen, vimentin, c-Fos, and clusterin in the postischemic kidney. Evidence for a heterogenous genetic response among nephron segments, and a large pool of mitotically active and dedifferentiated cells. *J Clin Invest.* 93;2175-2188.
- Wolbank S, Martijn van Griensven, Grillari-Voglauer RG, Peterbauer-Scherb A 2010. Alternative Sources of Adult Stem Cells: Human Amniotic Membrane. *Adv Biochem Engin/Biotechnol* 123:1-27.
- Workeneh BT. Acute Kidney Injury. Updated: Jan 13, 2017. [cited 2017 May 27] Available from: URL: <http://emedicine.medscape.com/article/243492-overview>
- Wu S, Xu Z, Liang H. 2014. Sneddon's syndrome: a comprehensive review of the literature. *Orphanet Journal of Rare Diseases* 9:215.
- Wyss M, Kaddurah-Daouk R. 2000. Creatine and Creatinine Metabolism. *Physiological Reviews.* 80[3];1107-1213

- Xue JL, Daniels F, Star RA, Kimmel PL, Eggers PW, Molitoris BA. 2006. Incidence and mortality of acute renal failure in Medicare beneficiaries, 1992 to 2001. *J Am Soc Nephrol* 17(4):1135–1142.
- Xing L, Cui R, Peng L, Ma J, Chen X, Xie RJ, et al. 2014. Mesenchymal stem cells, not conditioned medium, contribute to kidney repair after ischemia-reperfusion injury. *Stem Cell Research and Therapy* 5;101.
- Yamamoto T, Tada T, Brodsky SV, et al. 2002. Intravital videomicroscopy of peritubular capillaries in renal ischemia. *American Journal of Physiology*. 282;6:F1150–F1155.
- Yoshino J, Monkawa T, Tsuji M, Hayashi M, Saruta T. 2003. Leukemia inhibitory factor is involved in tubular regeneration after experimental acute renal failure. *J Am Soc Nephrol* 14 : 3090–3101.
- Yoshioka K, Murakami K, Maki S. 1992. Growth factors: a regulator of renal function. *Nihon Rinsho*. 50(12):2931-2936.
- Yu CCW, Woods AL, Levison DA. 1992. The assessment of cellular proliferation by immunohistochemistry: a review of currently available methods and their applications. *Histochemical Journal* 24;121-131.
- Zagoura DS, Roubelakis MG, Bitsika V, Trohatou O, Pappa KI, Kapelouzou A, et al. 2012. Therapeutic potential of a distinct population of human amniotic fluid mesenchymal stem cells and their secreted molecules in mice with acute hepatic failure. *Gut*. 61(6):894-906.
- Zelger B, Sepp N, Stockhammer G, Dosch E, Hilty E, Ofner D, et al. 1993. Sneddon's syndrome. A long-term follow-up of 21 patients. *Arch Dermatol* 129:437–447.
- Zhai Y, Busuttill RW, Kupiec-Weglinski JW. 2011. Liver ischemia and reperfusion injury: new insights into mechanisms of innate-adaptive immune-mediated tissue inflammation. *Am J Transplant* 11:1563-1569.
- Zhou BR, Xu Y, Guo SL, Xu Y, Wang Y, Zhu F, et al. 2013. The effect of conditioned media of adipose-derived stem cells on wound healing after ablative fractional carbon dioxide laser resurfacing. *Biomed Res Int*. 2013:519126.