

DAFTAR PUSTAKA

- Abbas, A. K., & Lichtman, A. H (Eds.). (2011). *Basic immunology. Functions and disorders of the immune system*, 3rd ed. (pp. 89–112; 258). Philadelphia USA: Elsevier Saunders.
- Ada, S., Seckin, D., Budakoglu, I., & Ozdemir, F. (2002). Treatment of uremic pruritus with narrowband ultraviolet B phototherapy: an open pilot study. *J Am Acad Dermatol*, 53, 149-51.
- Balaskas EV, Bamihis GI, Karamouzis M, Voyiatzis G, Tourkantonis A. (1998). Histamine and serotonin in uremic pruritus: effect of ondansetron in CAPD-pruritic patients. *Nephron*;78:395-402.
- Balgis, Soebono H, Budiyo A. (2016). Pengaruh fototerapi narrow band ultraviolet (NBUVB) terhadap kadar IL-6 serum pada penderita pruritus terkait GGT yang menjalani hemodialisis rutin.
- Bando T, Morikawa Y, Komori T, Senba E. (2006). Complete overlap of interleukin-31 receptor A and oncosantin M receptor beta in adult dorsal root ganglia with distinct developmental expression patterns. *Neuroscience*, 142, 1263-71.
- Banks WA, Kastin AJ, Gutierrez EG. (1994). Penetration of interleukin-6 across the murine blood-brain barrier. *Neuroscience letters*. 179(1-2): 53-6.
- Berneburg, M., Rocken, M., & Benedix, F. (2005). Phototherapy with narrowband UVB. *Acta Derm Venereol*, 85, 1-11.
- Bilsborough J, Leung DY, Maurer M, et al. (2006). IL-31 is associated with cutaneous lymphocyte antigen-positive skin homing T cells in patients with atopic dermatitis. *J Allergy Clin Immunol*. 117: 418-25.
- Bissonnette R, Papp KA, Poulin Y, et al. (2016). Topical tofacitinib for atopic dermatitis: a phase IIa randomized trial. *Br J Dermatol*.;175: 902-11
- Broxmeyer HE, Li J, Hangoc G, Cooper S, Tao W, Mantel C, et al. (2007). Regulation of myeloid progenitor cell proliferation / survival by IL-31 receptor and IL-31. *Exp Hematol*, 35, 78-86.

- Bulat, V., Dediol, I., Ljubicic, I., & Bradi, L. (2011). The mechanisms of action of phototherapy in the treatment of the most common dermatoses. *Coll Antropol*, 35, 147-51.
- Calvo, C. F., Chavanel, G., Senik, A. (1992). Substance P enhances IL-2 expression in activated human T cells. *J Immunol*, 148(11), 3498-504.
- Castellani ML, Felaco P, Galzio RJ, Tripodi D, Toniato E, De Lutiis MA, et al. (2010). IL-31 a cytokine involved in immunity and inflammation. *Int J Immunopatho Pharmacol*, 23, 709-13.
- Cekti C, Trisnowati N, Budiyo A. (2017). Pengaruh fototerapi narrow band ultraviolet (NBUVB) terhadap kadar tumor necrosis factor- α dalam serum pasien pruritus terkait GGT yang menjalani hemodialisis rutin.
- Cevikbas F, Wang X, Akiyama T, Kempkes C, Terhi Savinko T, Antal A, et al. (2014). A sensory neuron-expressed interleukin-31 receptor mediates t helper cell-dependent itch : involvement of TRPV1 and TRPA1. *J Allergy Clin Immunol*, 133,(2), 448-60.
- Chattopadhyay S, Tracy E, Liang P, Robledo O, Rose-John S, Baumann H. (2007). Interleukin-31 and oncostatin M mediate distinct signaling reactions and response pattern in lung epithelial cells. *J Biol Chem*, 282, 3014-26.
- Chen, S. (2012). Pruritus. *Dermatol Clin*, 30, 309-321.
- Chen HY, Chiu YL, Hsu SP, Pai MF, Lai CF, Yang JY, et al. (2010). Elevated C-reactive protein level in hemodialysis patients with moderate/severe uremic pruritus: a potential mediator of high overall mortality. *QJM*;103:837-46.
- Chen, Y., Chiu, W., & Wu, M. (2006). Therapeutic effect of topical gamma-linolenic acid on refractory uremic pruritus. *Am J Kidney Dis*, 48, 69-76.
- Cheung PF, Wong CK, Ho AW, Hu S, Chen DP, Lam CW. (2010). Activation of human eosinophils and epidermal keratinocytes by Th2 cytokine IL-31: implication for the immunopathogenesis of atopic dermatitis. *Int Immunol*, 22, 453-67.
- Cornelissen C, Luscher-Firzlauff J, Baron JM, Luscher B. (2012). Signaling by IL-31 and functional consequences. *Eur J Cell Biol*;91: 552-66.
- Dai X, Okazaki H, Hanakawa Y, et al. (2013). Eccrine sweat contains IL-1a, IL-1b and IL-31 and activates epidermal keratinocytes as a danger signal. *PLoS One*.;8:e67666.

- Dambacher J, Beigel F, Seiderer J, Haller D, Goke B, Auernhammer CJ, et al. (2007). Interleukin 31 mediates MAP kinase and STAT1/3 activation in intestinal epithelial cells and its expression is upregulated in inflammatory bowel disease. *Gut*;56:1257-65.
- Darso, U., Scharein, E., Bromm, B., & Ring, J. (1997). Skin testing of the pruritogenic activity of histamine and cytokines (interleukin-2 and tumour necrosis factor- α) at the dermal-epidermal junction. *Br J Dermatol*, 137, 415-7.
- Dillon SR, Sprecher C, Hammond A, Bilsborough J, Rosenfeld-Franklin M, Presnell SR, et al. (2004). Interleukin 31, a cytokine produced by activated T cells, induces dermatitis in mice. *Nat Immunol*;5:752-60.
- Diveu C, Lak-Hal AH, Froger J, et al. (2004). Predominant expression of the long isoform of GP130-like (GPL) receptor is required for interleukin-31 signaling. *Eur Cytokine Netw.*;15:291-302.
- Dogra, S., & Kanwar, A. (2004). Narrow band UVB phototherapy in dermatology. *Indian J Dermatol Venereol Leprol*, 70, 205-9.
- Dreuw A, Radtke S, Pflanz S, Lippok BE, Heinrich PC, Hermanns HM. (2004). Characterization of the signaling capacities of the novel gp130like cytokine receptor. *J Biol Chem.*;279:36112-20.
- Etter, L., & Myers, S. (2002). Pruritus in systemic disease: mechanisms and management. *Dermatol Clin*, 20, 459-72.
- Ezzat MH, Hasan ZE, Shaheen KY. (2011). Serum measurement of interleukin-31 (IL-31) in pediatric atopic dermatitis: elevated levels correlate with severity scoring. *J Eur Acad Dermatol Venereol*;25:334-9.
- Fallahzadeh, M., Roozbeh, J., Geramizadeh, B., & Namazi, M. (2011). Interleukin-2 serum levels are elevated in patients with uremic pruritus: a novel finding with practical implications. *Nephrol Dial Transplant*, 0, 1-6.
- Feramisco, J., Berger, T., & Steinhoff, M. (2010). Innovative management of pruritus. *Dermatol Clin*, 28, 467-78. Elsevier Ltd.
- Finlay, A., & Khan, G. (1994). Dermatology Life Quality Index (DLQI)—a simple practical measure for routine clinical use. *Clin Exp Dermatol*, 19, 210-6.
- Furue M, Chiba T, Tsuji G, et al. (2017). Atopic dermatitis: immune deviation, barrier dysfunction, IgE autoreactivity and new therapies. *Allergol Int.* 66:398-403.

- Furie M, Yamamura K, Kido-Nakahara M, Nakahara T, Fukui Y. (2017). Emerging role of interleukin-31 and interleukin-31 receptor in pruritus in atopic dermatitis. *Allergy*. 1-8.
- Gilchrest, B. (1979). Ultraviolet phototherapy of uremic pruritus. *Int J Dermatol*, 18, 741-9.
- Girndt, M., Sester, U., Kaul, H., & Kohler, H. (1998). Production of proinflammatory regulatory monokines in hemodialysis patients shown at a single-cell level. *J Am Soc Nephrol*, 9, 1689-96.
- Goldsmith L, Katz S, Gilchrest B, Paller A, Leffell D, Wolff K. (2012). Fitzpatrick's dermatology in general medicine. 8th ed. New York: McGraw-Hill.
- Grone, A. (2002). Keratinocytes and cytokines. *Vet Immunol Immunopathol*, 88(1-2), 1-12.
- Horejs-Hoeck J, Schwarz H, Lamprecht S, et al. (2012). Dendritic cells activated by IFN- γ /STAT1 express IL-31 receptor and release proinflammatory mediators upon IL-31 treatment. *J Immunol.*;188:53195326.
- Ikoma, A., Steinhoff, M., Ständer, S., Yosipovitch, G., & Schmelz, M. (2006). The neurobiology of itch. *Nat Rev Neurosci*, 7, 535-47.
- Ishii T, Wang J, Zhang W, Mascarenhas J, Hoffman R, Dai Y, et al. (2009). Pivotal role of mast cells in pruritogenesis in patients with myeloproliferative disorders. *Blood*, 113, 5942-50.
- Kasraie S, Niebuhr M, Werfel T. (2010). Interleukin (IL)-31 induces pro-inflammatory cytokines in human monocytes and macrophags following stimulation with staphylococcal exotoxins. *Allergy*, 65, 712-21.
- Kasraie S, Niebuhr M, Baumert K, Werfel T. (2011). Functional effects of interleukin 31 in human primary keratinocytes. *Allergy*.;66:845852.
- Kato A, Fujii E, Watanabe T, et al. (2014). Distribution of IL-31 and its receptor expressing cells in skin of atopic dermatitis. *J Dermatol Sci.*;74:229-35.
- Khopkar, U., & Pande, S. (2007). Etiopathogenesis of pruritus due to systemic causes: implications for treatment. *Indian J Dermatol Venereol Leprol*, 73, 215-7.
- Kimmel, M., Alscher, D., Dunst, R., Braun, N., Machleidt, C., Kiefer, T., Stü, C., et al. (2006). The role of micro-inflammation in the pathogenesis of uraemic pruritus in haemodialysis patients. *Nephrol Dial Transplant*, 21, 749-55.

- Kimmel, P., Phillips, T., Phillips, E., & Bosch, J. (1990). Effect of renal replacement therapy on cellular cytokine production in patients with renal disease. *Kidney Int*, 38, 129-35.
- Ko, M., Yang, J., Wu, H., Hu, F., Chen, S., Tsai, P., Jee, S., et al. (2011). Narrowband ultraviolet B phototherapy for patients with refractory uraemic pruritus: a randomized controlled trial. *Br J Dermatol*, 165, 633-9.
- Krajnik, M., & Zylicz, Z. (2001). Pruritus in advanced internal diseases pathogenesis and treatment. *Neth J Med*, 58, 27-40.
- Krutmann, J., & Morita, A. (1999). Mechanisms of ultraviolet (UV) B and UVA phototherapy. *J Invest Dermatol Symp Proc*, 4, 70-2.
- Kunsleben N, R€udrich U, Gehring M, Novak N, Kapp A, Raap U. (2015). IL31 induces chemotaxis, calcium mobilization, release of reactive oxygen species, and CCL26 in eosinophils, which are capable to release IL-31. *J Invest Dermatol.*;135:1908-11.
- Kurban, M., Boueiz, A., & Kibbi, A. (2008). Cutaneous manifestations of chronic kidney disease. *Clin Dermatol*, 26, 255-64.
- Kuypers, D. (2009). Skin problems in chronic kidney disease. *Nat Clin Pract Nephrol*, 5, 157-70.
- Lee CH, Hong CH, Yu WT, Chuang HY, Huang SK, Chen GS, et al. (2012). Mechanistic correlations between two hitch biomarkers, cytokine interleukin-31 and neuropeptide beta-endorphin, via STAT3/calcium axis in atopic dermatitis. *Br J Dermatol*, 167, 794-803.
- Levey, A., Eckardt, K., Tsukamoto, Y., Levin, A., Coresh, J., Rossert, J., Zeeuw, D., et al. (2005). Definition and classification of chronic kidney disease: a position statement from Kidney Disease: Improving Global Outcomes (KDIGO). *Kidney Int*, 67, 2089-100.
- Lewis, V., & Finlay, A. Y. (2004). 10 Years Experience of the Dermatology Life Quality Index (DLQI). *J Invest Dermatol Symp Proc*, 9, 169-80.
- Luger, A., Kovarik, J., Stummvoll, H., Urbanska, A., & Luger, T. (1987). Blood — membrane interaction in hemodialysis leads to increased cytokine production. *Kidney Int*, 32, 84-8.
- Maier E, Mittermeir M, Ess S, et al. (2015). Prerequisites for functional interleukin 31 signaling and its feedback regulation by suppressor of cytokine signaling 3 (SOCS3). *J Biol Chem.*;290:24747-59.

- Makhlough, A. (2010). Topical capsaicin therapy for uremic pruritus in patients on hemodialysis. *IJKD*, 4, 137-40.
- Manenti, L., Tansinda, P., & Vaglio, A. (2009). Uraemic pruritus clinical characteristics, pathophysiology and treatment. *Drugs*, 69, 251-63.
- Martin, H. A. (1996). Bradykinin potentiates the chemoresponsiveness of rat cutaneous C-fibre polymodal nociceptors to interleukin-2. *Arch Physiol Biochem*, 104(2), 229–38.
- McCandless EE, Rugg CA, Fici GJ, Messamore JE, Aleo MM, Gonzales AJ. (2014). Allergen-induced production of IL-31 by canine Th2 cells and identification of immune, skin, and neuronal target cells. *Vet Immunol Immunopathol.*;157:42-8.
- Metz, M., & Stander, S. (2010). Chronic pruritus – pathogenesis , clinical aspects and treatment. *JEADV*, 24, 1249-60.
- Moraes, M., & Russo, G. (2001). Thalidomide and its dermatologic uses. *Am J Med Sci*, 321, 321-6.
- Niebuhr M, Mamerow D, Heratizadeh A, Satzger I, Werfel T. (2011). Staphylococcal a-toxin induces a higher T cell proliferation and interleukin-31 in atopic dermatitis. *Int Arch Allergy Immunol.*;156: 412-5.
- Neis MM, Peters B, Dreuw A, Wenzel J, Bieber T, Mauch C, et al. (2006). Enhanced expression levels of IL-31 correlate with IL-4 and IL-13 in atopic and allergic contact dermatitis. *J Allergy Clin Immunol*;118:930-7.
- Nemoto O, Hayashi N, Kitahara Y, et al. (2016). Effect of topical phosphodiesterase 4 inhibitor E6005 on Japanese children with atopic dermatitis: results from a randomized, vehicle-controlled exploratory trial. *J Dermatol.*;43:881-7.
- Niyonsaba F, Ushio H, Hara M, et al. (2010). Antimicrobial peptides human beta-defensins and cathelicidin LL-37 induce the secretion of a pruritogenic cytokine IL-31 by human mast cells. *J Immunol.*; 184:3526-34.
- Nobbe S, Dziunycz P, Muhleisen B, Bilsborough J, Dillon SR, French LE, et al. (2012). IL-31 expression by inflammatory cells is preferentially elevated in atopic dermatitis. *Acta Derm Venerol*, 92, 24-8.
- Ohmatsu H, Sugaya M, Suga H, Morimura S, Miyagaki T, Kai H, et al.(2012). Serum IL-31 levels are increased in patients with cutaneous T-cell lymphoma. *Acta Derm Venerol*, 92, 282-3.

- Patel, T., Freedman, B., & Yosipovitch, G. (2007). An update on pruritus associated with CKD. *Am J Kidney Dis*, 50, 11-20.
- Pauli-Magnus, C., Klumpp, S., Alscher, D., Kuhlmann, U., & Mettang, T. (2000). Short-term efficacy of tacrolimus ointment in severe uremic pruritus. *Periton Dialysis Int*, 20, 802-9.
- Pertosa, G., Grandaliano, G., Gesualdo, L., & Schena, F. (2000). Clinical relevance of cytokine production in hemodialysis. *Kidney Int*, 58, 104-11.
- Phan, N., Blome, C., Fritz, S., Gerst, J., Reich, A., Ebata, T., Augustin, M., et al. (2011). Assessment of pruritus intensity: prospective study on validity and reliability of the visual analogue scale, numerical rating scale and verbal rating scale in 471 patients with chronic pruritus. *Acta Derm Venereol*, 92, 1-6.
- Raap U, Wichmann K, Bruder M, Stander S, Wedi B, Kapp A, et al. (2008). Correlation of IL-31 serum levels with severity of atopic dermatitis. *J Allergy Clin Immunol*;122:421-3.
- Reich, A., Heisig, M., Phan, N., Taneda, K., Takamori, K., Takuechi, S., Furue, M., et al. (2011). Visual analogue scale evaluation of the instrument for the assessment of Pruritus. *Acta Derm Venereol*, 91, 1-5.
- Rysz, J., Banach, M., Cialkowska-Rysz, A., Stolarek, R., Barylski, M., Drozd, J., & Okonski, P. (2006). Blood serum levels of IL-2, IL-6, IL-8, TNF- α and IL-1 β in patients on maintenance hemodialysis. *Cell Mol Immunol*, 3, 151-4.
- Samrao A, Berry TM, Goreshi R, Simpson EL. (2012). A pilot study of an oral phosphodiesterase inhibitor (apremilast) for atopic dermatitis in adults. *Arch Dermatol.*;148:890-7.
- Shultz, B., & Roenigk, H. (1980). Uremic pruritus treated With ultraviolet light. *JAMA*, 243, 1836-7.
- Sigmundsdottir, H., Johnston, A., Gudjonsson, J., & Valdimarsson, H. (2005). Narrowband – UVB irradiation decreases the production of pro-inflammatory cytokines by stimulated T cells. *Arch Dermatol Res*, 297, 39-42.
- Simpson EL, Bieber T, Guttman-Yassky E, et al. (2016). Two phase 3 trials of dupilumab versus placebo in atopic dermatitis. *N Engl J Med.*;375:2335-48.
- Sonkoly, E., Muller, A., Lauerma, A., Pivarcsi, A., Soto, H., Kemeny, L., Alenius, H., et al. (2006). IL-31: a new link between T cells and pruritus in atopic skin inflammation. *J Allergy Clin Immunol*, 117, 411-7.

- Stenvinkel P, Alvestrand A. (2002). Inflammation in end-stage renal disease: sources, consequences, and therapy. *Semin Dial*; 15:329-37.
- Stott B, Lavender P, Lehmann S, Pennino D, Durham S, Schmidt-Weber CBJ. (2013). Human IL-31 is induced by IL-4 and promotes TH-2 driven inflammation. *Allergy Clin Immunol*, 32,446-54.
- Takaoka A, Arai I, Sugimoto M, Yamaguchi A, Tanaka M, Nakaike S. (2005). Expression of IL-31 gene transcripts in NC/Nga mice with atopic dermatitis. *Eur J Pharmacol*;516:180-1.
- Takaoka A, Arai I, Sugimoto M, Honma Y, Futaki N, Nakamura A, et al. (2006). Involvement of IL-31 on scratching behavior in NC/Nga mice with atopic-like dermatitis. *Exp Dermatol*; 15:161-7.
- Twycross, R., Greaves, M., Handwerker, H., Jones, E., Libretto, S., Szepietowski, J., & Zyllicz, Z. (2003). QJM Itch : scratching more than the surface. *Q J Med*, 96, 7-26.
- Verdy, Radiono S, Budiyo A. (2015). Pengaruh fototerapi narrowband ultraviolet B terhadap intensitas pruritus, kualitas hidup, dan kadar interleukin-2 serum pasien pruritus terkait GGT yang menjalani hemodialisis rutin.
- Wahlgren, C., Linder, M., Hagermark, O., & Scheynius, A. (1995). Itch and inflammation induces by intradermally injected interleukin-2 in atopic dermatitis patients and healthy subjects. *Arch Dermatol Res*, 287, 572-80.
- Wang, H., & Yosipovitch, G. (2010). New insights into the pathophysiology and treatment of chronic itch in patients with end-stage renal disease, chronic liver disease and lymphoma. *Int J Dermatol*, 49, 1-11.
- Wong CK, Leung KM, Qiu HN, Chow JY, Choi AO, Lam CW. (2012). Activation of eosinophils interacting with dermal fibroblast by pruritogenic cytokine IL-31 and alarmin IL-33: implications in atopic dermatitis. *PLoS One*. doi:10.1371/journal.pone.0029815.
- Yagi Y, Andoh A, Nishida A, Shioya M, Nishimura T, Hashimoto T, Tsujikawa T, Salto Y, Fujiyama Y. (2007). Interleukin-31 stimulates production of inflammatory mediators from colonic subepithelial myofibroblasts. *Int J Mol Med*. 19(6) : 941-6.
- Yamamura K, Uruno T, Shiraishi A, et al. (2017). The transcription factor EPAS1 links DOCK8 deficiency to atopic skin inflammation via IL-31 induction. *Nat Commun.*;8:13946.

- Yosipovitch, G. (2003). Pruritus. *Curr Probl Dermatol*, 15, 143-64.
- Yosipovitch, G., Zucker, I., Boner, G., Gafter, U., Shapira, Y., & David, M. (2001). A questionnaire for the assessment of pruritus: validation in uremic patients. *Acta Derm Venereol*, 81, 108-11.
- Young, T., Patel, T., Camacho, F., Clark, A., Freedman, I., Kaur, M., Fountain, J., et al. (2009). A pramoxine-based anti-itch lotion is more effective than a control lotion for the treatment of uremic pruritus in adult hemodialysis patients. *J Dermatolog Treat*, 20, 76-81.
- Zamauskaite, A., Perez-cruz, I., Yaqoob, M., Madrigal, J., & Cohen, S. (1999). Nephrology dialysis transplantation effect of renal dialysis therapy modality on T cell cytokine production. *Nephrol Dial Transplant*, 14, 49-55.
- Zhang Q, Putheti P, Zhou Q, Liu Q, Gao W. (2008). Structures and biological functions of IL-31 and IL-31 receptors. *Cytokine Growth Factor Rev*, 19, 347-56.