DAFTAR PUSTAKA

Alansari, S., Sangsuwon, C., Vongthongleur, T., Kwal, R., Teo, M.C., Lee, Y.B., Nervina, J., Teixeira, C.C., dan Alikhani, M., 2015, Biological principles behind accelerated tooth movement, *Semin Orthod*, 21 (1): 151-61.

Alansari, S., Nervina, J., Alikhani, M., Sangsuwon, C., dan Teixeira, C.C., 2017, Different methods of accelerating tooth movement, *Clin Dent Rev*, 1 (1): 1-10.

Alfaqeeh, S.A. dan Anil S., 2014, Gingival crevicular fluid flow rate and alkaline phosphatase level as potential marker of active tooth movement, *OHDM*, 13 (2): 458-63.

Ariffin, S.H.Z., Ellias, M.F., Wahab, R.M.A., Bakar, Y., dan Senafi, S., 2010, Profil aktiviti laktat dehidrogenase, asid fosfatase rintang tartat dan alkalin fosfatase pada air liur semasa rawatan ortodonti, *Sains Malaysiana*, 39 (3): 405-12.

Ariffin, S.H.Z., Yamamoto, Z., Abidin, I.Z.Z., Wahab, R.M.A., dan Ariffin, Z.Z., 2011, Cellular and molecular changes in orthodontic tooth movement, *The Scientific World Journal*, 11 (3): 1788-803.

Asma, A.A.A., Megat, A.W.R., dan Zainal, A.S.H., 2008, Crevicular alkaline phosphatase activity during orthodontic tooth movement: canine retraction stage, *J Med Sci*, 8 (3): 228-33.

Barolet, D., 2008, Light-emitting Diodes (LEDs) in Dermatology, *Semin Cutan Med Surg*, 27 (4): 227-38.

Barolet, D. dan Boucher, A., 2010, Radiant near infrared light emitting diode exposure as skin preparation to enhance photodynamic therapy inflammatory type acne treatment outcome, *Lasers Surg Med*, 42 (2): 171-8.

Bloise, N., Ceccarelli, G., Minzioni, P., Vercellino, M., Benedetti, L., Gabriella, M., Imbriani, M., dan Visai, L., 2013, Investigation of low-level laser therapy potentiality on proliferation and differentiation of human osteoblast-like cells in the absence/presence of osteogenic factors, *J of Biomedical Optics*, 18 (12): 1-13.

Camacho, A.D. dan Cujar, S.A.V., 2010, Acceleration effect of orthodontic movement by application of low intensity laser, *J Oral Laser App*, 10 (2): 99-105.

Campbell, N.A., Reece, J.B., dan Mitchell, L.G., 2009,. *Biology*, 8th edition, Pearson Benjamin Cummings, San Francisco, 90.

Choi, E.J., Yim, J.Y., Koo, K.T., Seol, Y.J., Lee, Y.M., Ku, Y., Rhyu, I.C., Chung, C.P., dan Kim, T.I., 2010, Biological effects of a semiconductor diode laser on human periodontal ligament fibroblasts, *J Period Implant Sci*, 40 (3): 105-10.

Chung, S.E.V., 2013, The effect of light-emitting diode phototherapy on the rate of orthodontic tooth movement - A clinical study, *Tesis*, University of Toronto (No.9030348).

Coombe, A.R., Ho, C-TG., Philips, J.R., Chapple, C.C., Yum, L.W.P., Darendeliler, M.A., dan Hunter, N., 2001, The effects of low level laser irradiation on osteoblastic cells, *Clin Orthod Res*, 4 (1): 3-14.

Craig, R.G., Powers, J.M., dan Walaham, J.C., 2002, *Restorative Dental Materials Properties and Manipulation*, 7th edition, Mosby, St.Louis, p. 60-9.

de Aguiar, M.C.S., Perinetti, G., dan Capelli, J., 2017, The gingival crevicular fluid as a source of biomarkers to enhance efficiency of orthodontic and functional treatment of growing patients, *Biomed Res Int*, 1-7.

deFreitas, L.F, dan Hamblin, M.R., 2016, Proposed mechanisms of photobiomodulation or low-level light therapy, *IEEE J Sel Top Quantum Electron*, 22 (3): 1-37.

Delaissé, J.M, Engsig, M.T., Everts, V., del Carmen Ovejero, M., Ferreras, M., Lund, L., Vu, T.H., Werb, Z., Winding, B., Lochter, A., Karsdal, M.A., Troen, T., Kirkegaard, T., Lenhard, T., Heegaard, A.M., Neff, L., Baron, R., dan Foged, N.T., 2000, Proteinases in bone resorption: obvious and less obvious roles, *Clinica Chimica Acta*, 291 (2): 223-34.

Dereci, O., Sindel, A., Toru, H.S., Yuce, E., Ay, S., dan Tozoglu, S., 2016, The comparison of the efficacy of blue light-emitting diode light and 980-nm low level laser light on bone regeneration, *J of Cranio Surg*, 27 (8): 2185-8.

Dhiman, S. dan Khan, S., 2018, Effect of low-level laser therapy (LLLT) on orthodontic tooth movement - cellular level, *Adv Dent and Oral Health*, 7 (5): 1-5.

Dhopatkar, A.A., Sloan, A.J., Rock, W.P., Cooper, P.R., dan Smith, A.J., 2005, A novel in vitro culture model to investigate the reaction of the dentine-pulp complex to orthodontic force, *J Orthod*, 32 (2): 122-32.

Eells, J.T., Wong-Riley, M.T., VerHoeve, J., Henry, M., dan Buchman, E., 2004, Mitochondrial signal transduction in accelerated wound and retinal healing by near-infrared light therapy, *Mitochondrion*, 4 (5): 559-67.

Ekizer, A., Uysal, T., Güray, E., dan Akkuş, D., 2015, Effect of LED-mediated-photobiomodulation therapy on orthodontic tooth movement and root resorption in rats, *Lasers Med Sci*, 30 (2): 779-85.

Ekizer, A., Turker, G., Uysal, T., Guray, E., dan Tasdemir, Z., 2016, Light-emitting diode mediated photobiomodulation therapy improves orthodontic tooth movement and miniscrew stability: a randomized controlled clinical trial, *Laser Surg Med*, 48 (10): 936-43.

Farahani, M., Safavi, S.M., Dianat, O., Khoramian, Tusi, S., dan Younessian, F., 2015, Acid and alkaline phosphatase levels in GCF during orthodontic tooth movement, *J Dent Shiraz Univ Med Sci*, 16 (3): 237-45.

Farivar, S., Malekshahabi, T., dan Shiari, R., 2014, Biological effects of low level laser therapy, *J Lasers Med Sci*, 5 (2): 58-62.

Fujita, S., Yamaguchi, M., Utsunomiya, T., Yamamoto, H., dan Kasai, K., 2008, Low-energy laser stimulates tooth movement velocity via expression of RANK and RANKL, *Orthod Craniofac Res*, 11 (3): 143-55.

Garavello, I., Baranauskas, V., Joazeiro, P.P., Padovani, C.R., Dal Pai-Silva, M., dan da Cruz-Hofling, M.A., 2003, Low-power laser irradiation improves histomorphometrical parameters and bone matrix organization during tibia wound healing in rats, *J Photochem Photobiol B Biol*, 70 (2): 81-9.

Gunji, H., Kunimatsu, R., Tsuka, Y., Yoshimi, Y., Sumi, K., Awada, T., Nakajima, K., Kimura, A., Hiraki, T., Hirose, N., Yanoshita, M., dan Tanimoto, K., 2018, Effect of high-frequency near-infrared diode laser irradiation on periodontal tissues during experimental tooth movement in rats, *Lasers Surg Med*, 50 (7): 772-80.

Gwynne, P.J. dan Gallagher, M.P., 2018, Light as a Broad-Spectrum Antimicrobial, *Antimicrobial Front Microbiol*, 9 (119): 1-9.

Hamblin, M.R. dan Demidova, T.N., 2006, a Mechanisms of Low Level Light Therapy, *Proc. SPIE*, 6140: 1-12.

Hamblin, M.R., 2018, Mechanisms and Mitochondrial Redox Signaling in Photobiomodulation, *Photochemistry and Photobiology*, 94 (2): 199-212.

Harkness, J.E. dan Wagner, J.E., 1983, *The Biology And Medicine Of Rabbits And Rodents*, 2nd edition, Lea and Febiger, Philadelphia, 17-24.

Haxsen, V., Schikora, D., Sommer, U., Remppis, A., dan Greten, J., 2007, Relevance of laser irradiance threshold in the induction of alkaline phosphatase in human osteoblast cultures, *Lasers Surg Med*, 23 (4): 381-4.

Heino, T.J. dan Hentunen, T.A., 2008, Differentiation of Osteoblasts and Osteocytes from Mesenchymal Stem Cells, *Curr Stem Cell Res Ther*, 3 (2): 131-45.

Henneman, S., Hoff, J.W., dan Maltha, J.C., 2008, Mechanobiology of tooth movement, *Eur J Orthod*, 30 (3): 299-306.

Insoft, M., King, G.J., dan Keeling, S.D., 1996, The measurement of acid and alkalin phosphatase in gingival crevidular fluids during orthodontic tooth movement, *Am J Orthod Dentofacial Orthop*, 109 (3): 287-96.

Intan, Z.Z.A., Shahrul, H., Rohaya, M.A.W., Sahidan, S., dan Zaidah, Z.A., 2008, Osteoclast and osteoblast development of musculus haemopoietic mononucleated cells, *J Biological Sci*, 8 (3): 506-16.

Isik, F., Sayinsu, K., Arun, T., dan Ünlüçerçi, Y., 2005, Bone marker levels in gingival crevicular fluid during orthodontic intrusive tooth movement: a preliminary study, *J Contemp Dent Pract*, 6 (2): 27-35.

Iskandar, P., 2017, *Aspek Biologis Pergerakan Gigi Ortodontik*, RSIA Catherine Booth, Makasar.

Iyyer, B.S., 2012, *Orthodontics The Art and Science*, 5th edition, Arya Publishing, New Delhi, 183-4.

Jong, M. dan Maina, T., 2010, Of mice and humans: are they the same?-implications in cancer translational research, *J Nucl Med*, 51 (4): 501-4.

Juhasz-Böss, Fehm, T., Ney, J.T., dan Solomayer, E.F., 2012, Pathophysiology of bone remodelling and current therapeutic approaches, *Geburtsh Frauenheilk*, 72 (6): 502-6.

Junior, J.C., Kantarci, A., Haffajee, A., Teles, R.P., Fidel, R., dan Figueredo, C.M., 2011, Matrix metalloproteinases and chemokines in the gingival crevicular fluid during orthodontic tooth movement, *Eur J Orthod*, 33 (6): 705-11.

Kalka, K., Merk, H., dan Mukhtar, H., 2000, Photodynamic therapy in dermatology, *J Am Acad Dermatol*, 42 (3): 389-13.

Karoussis, I.K., Kyriakidou, K., Psarros, C., Koutsilieris, M., dan Vrotsos, J.A., 2018, Effects and action mechanism of low level laser therapy (LLLT): Applications in periodontology, *Dentistry*, 8 (9): 1-6.

Karu, T.I., Pyatibrat, L.V., Kolyakov, S.F., dan Afanasyeva, N.I., 2005, Absorption measurements of a cell monolayer relevant to phototherapy: Reduction of cytochrome c oxidase under near IR radiation, *Photochem Photobiol Sci*, 81 (2): 98-106.

Kau, C.H., Kantarci, A., Shauhnessy, T., Vachiramon, A., Santiwong, P., Fuente, A., Skrenes, D., Ma, D., dan Brawn, P., 2013, Photobiomodulation accelerates orthodontic alignment in the early phase of treatment, *Prog Orthod*, 14 (30): 1-9.

Kim, Y.D., Kim, S.S., Kim, S.J., Kwon, D.W., Jeon, E.S., dan Son, W.S., 2008, Low-level laser irradiation facilitates fibronectin and collagen type I turnover during tooth movement in rats, *Lasers Med Sci*, 25 (1): 25-31.

Krishnan, D. dan Davidovitch, Z., 2009, *Biological Mechanisms of Tooth Movement*, Wiley-Blackwell, United Kingdom, 1-39.

Kumar, A.A., Saravanan, K., Kohila, K., dan Kumar, S.S., 2015, Biomarkers in orthodontic tooth movement, *J Pharm Bioall Sci*, 7 (2): 325-30.

Limpanichkul, W., Godfrey, K., Srisuk, N., dan Rattanayatikul, C., 2006, Effects of low-level laser therapy on the rate of orthodontic tooth movement, *Orthod Craniofac Res*, 9 (1): 38-43.

Luger, E.J., Rochkind, S., Wollman, Y., Kogan, G., dan Dekel, S., 1998, Effect of low-power laser irradiation on the mechanical properties of bone fracture healing in rats, *Lasers Surg Med*, 22 (2): 97-102.

Matsumoto, M., Ferino, R., Monteleone, G., dan Ribeiro, D., 2009, Low-level laser therapy modulates cyclo-oxygenase-2 expression during bone repair in rats, *Lasers Med Sci*, 24 (2): 195-201.

Mizrahi, E., 2010, Risk management in clinical practice. Part 7. Dento-legal aspects of orthodontic practice, *Br Dent J*, 209 (8): 381-90.

Nimeri, G., Kau, C.H., Abou-Kheir, N.S., dan Corona, R., 2013, Acceleration of tooth movement during orthodontic treatment - a frontier in orthodontics, *Progress Orthod*, 14 (42): 1-8.

Ohba, Y., Ohba, T., Terai, K., dan Moriyama, K., 2000, Expression of cathepsin K mRNA during experimental tooth movement in rat as revealed by in situ hybridization, *Arch Oral Bio*, 45 (1): 63-9.

Orikasa, N., Shimakura, M., dan Kusakari, H., 1989, Effects of Al-Ga-As laser in bone histomorphometry. In: Yamamoto H, Atsumi K, Kusakari H, editors. Lasers in dentistry. Amsterdam: Elsevier Science Publishers B.V., 1989:105-9.

Ozmeric, N., 2004, Advance in Periodontal disease markers, *Clin Chim Acta*, 343 (1-2): 1-16.

Pagin, M.T., Oliveira, F.A., Oliveira, R. C., Sant'Ana, A.C.P., Rezende, M.L.R., Greghi, S.L.A., dan Damante, C.A., 2014, Laser and light-emitting diode effects on pre-osteoblast growth and differentiation, *Lasers Med Sci*, 31 (5): 225-9.

Perinetti, G., Paolantinio, M., D'Attilio, M., D'Archivio, D., Tripodi, D., Femminella, B., Festa, F., dan Spoto, G., 2002, Alkaline phosphatase activity in gingival crevicular fluid during human orthodontic tooth movement, *Am J Orthod Dentofacial Orthop*, 122 (5): 548-56.

Proffit, W.R., Fields, H.W., dan Sarver, D.M., 2007, *Contemporary Orthodontics*, 4th edition, Mosby, St. Louis, 385-402.

Rohaya, M.A.W., Maryati, M.D., dan Sahidan, S., 2011, Crevicular tartrate resistant acid phosphatase activity and rate of tooth movement under different continuous force applications, *Afr J Pharm Pharmacol*, 5 (20): 2213-9.

Rowan, R.C., 2010, The effect of two energy density and dose applications of low level laser therapy on orthodontic tooth movement, *Tesis*, Saint Louis University.

Ryer, A.D., 1998, *Light Measurement Handbook*, Newbuyport MA, International Light, 1-64.

Saito, S. dan Shimizu N., 1997, Stimulatory effects of low-power laser irradiation on bone regeneration in midpalatal suture during expansion in the rat, *Am J Orthod Dentofacial Orthop*, 111(5): 525-32.

Schafer, F.Q dan Buettner, G.R., 2001, Redox environment of the cell as viewed through the redox state of the glutathione disulfide/glutathione couple, *Free Radic Biol Med*, 30 (2001): 1191-212.

Soedjono-Aswin, 2001, *Metodologi Penelitian Kedokteran*, Fakultas Kedokteran Universitas Gadjah Mada, Yogyakarta, 6.

Sommer, A.P., Pinherio, A.L., dan Mester, A.R., 2001, Biostimulatory windows in low-intensity laser activation: Lasers, scanners, and NASA's light-emitting diode array system, *J Clin Laser Med Surg*, 19 (1): 29-33.

Stein, E., Koehn, J., Sutter, W., Wendtlandt, G., Wanschitz, F., Thurnher, D., Baghestanian, M., dan Turhani, D., 2008, Initial effects of low-level laser therapy on growth and differentiation of human osteoblast-like cells, *Wien Klin Wochenschr*, 120 (3-4): 112-7.

Stucki, U., Schmid, J., Hämmerle, C.F., dan Lang, N.P., 2001, Temporal and local appearance of alkaline phosphatase activity in early stage of guided bone regeneration, *Clin Oral Implants Res*, 12 (2): 121-7.

Su, M., Borke, J.L., Donahue, H.J., Li, Z., Warhawsky, N.M., Russel, C.M., dan Lewis, J.E., 1997, Expression of connexin 43 in rat mandibular bone and periodontal ligament (PDL) cells during experimental tooth movement, *J Dent Res*, 76 (7): 1357-66.

Sun, X., Wang, R., dan Zhang, X., 2006, Effects of He-Ne laser irradiation on the expression of transforming growth factor beta1 during experimental tooth movement in rabbits, *Shanghai Kou Qiang Yi Xue*, 15 (1): 52-7.

Taba, M., Kinney, J., Kim, A.S., dan Giannobile, W.V., 2005, Diagnostic biomarker for oral and periodontal disease, *Dent Clinc North Am*, 49 (3): 551-72.

Vanderlip, S.L., 2003, *The Guinea Pig Handbook*, Barron's Educational, New York, 1-14.

Wang, Y., Huang, Y., Wang, Y., Lyu, P., dan Hamblin, M.R., 2016, Photobiomodulation (blue and green light) encourages osteoblastic-differentiation of human adipose-derived stem cells: role of intracellular calcium and light-gated ion channels, *Sci Rep*, 6 (33719): 1-28.

Wardana, P.N., Christnawati, Karunia, D., 2018, Pengaruh waktu pemaparan sinar blue-light emitting diode terhadap percepatan pergerakan gigi secara ortodonti pada marmut (Cavia cobaya), *Tesis*, Fakultas Kedokteran Gigi, Universitas Gadjah Mada, Yogyakarta.

Wilson, B. C. dan Patterson, M. S., 1986, The Physics of Photodynamic Therapy, *Phys Med Biol*, 31 (1): 327-60.

Wu, J-Y., Chen, C-H., Yeh, L-Y., Yeh, M-L., Ting, C-C., dan Wang, Y-H., 2013, Low-power laser irradiation promotes the proliferation and osteogenic differentiation of human periodontal ligament cells via cyclic adenosine monophosphate, *Int J of Oral Sci*, 5 (2): 85-91.

Yamaguchi, M., 2009, RANK/RANKL/OPG during orthodontic tooth movement, *Orthod Craniofac Res*, 12 (2): 113-9.

Yamaguchi, M., Hayashi, M., Fujita, S., Yoshida, T., Utsonomiya, T., Yamamoto, H., dan Kasai, K., 2010, Low-energy laser irradiation facilitates the velocity of tooth movement and the expressions of matrix metalloproteinase-9, cathepsin K, and alpha (v) beta (3) integrin in rats, *Eur J Orthod*, 32 (2): 131- 9.

Yezdani, A., Dhar, N.S., Murali, R.V., Manjula, W.S., Padmavathy, K., dan Prasanth, K., 2018, Bone turnover changes during human orthodontic tooth movement - An assessment of phosphatases activity in gingival crevicular fluid, *EC Dental Science*, 17 (2): 51-62.

Youssef, M., Ashkar, S., Hamade, E., Gutknecht, N., Lampert, F., dan Mir, M., 2008, The effect of low-level laser therapy during orthodontic movement: a preliminary study, *Lasers Med Sci*, 23 (1): 27-33.

Yudaniayanti, I.S., 2005, Aktifitas alkaline phosphatase pada proses kesembuhan patah tulang femur dengan terapi CaCO3 dosis tinggi pada tikus jantan (Sprague dawley), *Media Kedokteran Hewan*, 21 (1) : 15-8.