

DAFTAR PUSTAKA

- Akcaý I, Sen BH. (2012). The effect of surfactant addition to EDTA on microhardness of root dentin. *J Endod.* May;38(5):704-7
- Adel, A., Youssef, R., Khalaf, A. A., Ghobashy, A. M., Abd, A., & Rahman, E. (2023). Evaluation of mechanical properties and bond strength to chitosan cross-linked dentin (in vitro study).*Misr International University Digital Repository* 24(10), 500–506.
- Alamoudi, R. A. (2019). The smear layer in endodontic: To keep or remove-an updated overview. *Saudi Endodontic Journal*, 9(2), 71–81. 8
- Ali, A., Bhosale, A., Pawar, S., Kakti, A., Bichpuriya, A., & Agwan, M. A. (2022). Current Trends in Root Canal Irrigation. *Cureus*, 14(5), 1–8.
- Andrade, F. B. De, Vivian, R. R., Antonio, M., & Duarte, H. (2020). *Influence of EDTA and its Association with Benzalkonium Chloride on Enterococcus faecalis Adhesion to Dentin.* 14(4), 632–638.
- Anusavice, K. J. 2003. *Phillips Science of Dental Material* 10th Edition. Jakarta, DKI Jakarta, Indonesia: EGC
- Aydin, Z. U., Ozyurek, T., Keskin, B., dan Baran, T. (2019). Effect of Chitosan Nanoparticle, QMix, and EDTA on TotalFill BC Sealers Dentinal Tubule Penetration: A Confocal Laser Scanning Microscopy Study. *Odontology.* 107(1), 64-71.
- Arruda, J. A. A., Schuch, L. F., Pereira, A., Monteiro, J. L. G. C., Junior, P. M. R. M., Mesquita, R. A., Moreno, A., dan Callou, G. (2019). Investigation of Different Sodium Hypochlorite Volumes, Concentrations and Times of Irrigation in Endodontic Therapy: A Systematic Review, *Arch Health Invest.* 8(4), 185-191
- Berman, L.H., Hargreaves, K.M., dan Rotstein, I. (2021). *Cohen’s Pathways of the Pulp* :12th Ed. Elsevier. Missouri.
- Baruwa, A.O., Martins, J.N.R., Maravic, T., Mazzitelli, C., Mazzoni, A., danGinjeira, A. (2022). Effect of Endodontic Irrigating Solutions on Radicular Dentine Structure and Matrix Metalloproteinases–A Comprehensive Review. *J.Dent.* 10(219): 1-16.
- Basrani, B. (2015). *Endodontic Irrigation.* Springer. Switzerland.
- Berman, L.H., Hargreaves, K.M., dan Rotstein, I. (2021). *Cohen’s Pathways of thePulp* :12th Ed. Elsevier. Missouri.
- Boutsioukis. C., Verhaagen. B., Walmsley. A.D., Versluis. M., dan van der Sluis,L.W. (2013) Measurement and Visualization of File-to-Wall Contact

During Ultrasonically Activated Irrigation in Simulated Canals. *Int Endod J.* 46(11),1046-55.

Briso A.L.F., Rahal V., Sundfeld R.H., Dos Santos P.H., Alexandre R.S. (2014). Effect of sodium ascorbate on dentin bonding after two *bleaching* tehcniques. *Operative dentistry* 39(2): 195-203

Bukhari, S. dan Babaeer, A. (2019). Irrigation in Endodontics: a Review. *Curr. Oral Health Rep.* 6, 367-376

Carlos de Lima Dias-Junior, L., Fonseca de Castro, R., Fernandes, A. D., Reis Guerreiro, M. Y., Silva, E. J. N. L., & Melo da Silva Brandão, J. (2020). Final endodontic irrigation with 70% ethanol enhanced calcium hydroxide removal from apical third. *Journal of Endodontics*.

Chellapandian, K., Kondas, V. V., Ravichandran, A., dan Praveen, S. (2022). Recent Advancements In Endodontic Irrigation Systems. *J Posit Psychol.* 2(6), 3809-3822.

Darrag A.M., (2014) Effectiveness of different final irrigation solutions on smear layer removal in intraradicular dentin, *Tanta Dental Journal*, Volume 11, Issue 2, 2014, Pages 93-99, ISSN 1687-8574,Deviyanti. (2018). *Potensi Larutan Chitosan 0,2% Sebagai Alternatif Bahan Irigasi Dalam Perawatan Saluran Akar Gigi (Kajian Pustaka)*. 14(1), 6–10.

David Cash. (2014). Acid-base titrations: Citric acid – Part 1. *University of Waterloo*. Chem13 News Magazine <https://uwaterloo.ca/chem13-news-magazine/november-2014/chemistry/acid-base-titrations-citric-acid-part-1>

Dotto, L., Sarkis Onofre, R., Bacchi, A., & Rocha Pereira, G. K. (2020). Effect of Root Canal Irrigants on the Mechanical Properties of Endodontically Treated Teeth: A Scoping Review. *Journal of Endodontics*, 46(5), 596-604.e3.

Eighteenth. (2022). Endo with Eighteenth. Changzhou Sifary Medical Technology Co., Ltd., diunduh dari : <https://www.eighteenth.com/upload/2022/0216/Eighteenthcatalogue2022.pdf> , pada tanggal 23/01/2024.

El-Banna A, Elmesellawy MY, Elsayed MA. . 2023. Flexural strength and microhardness of human radicular dentin sticks after conditioning with different endodontic chelating agents. *J Conserv Dent.* May-Jun;26(3):344-348.

- Fernandes LL, Resende CX, Tavares DS, Soares GA, Castro LO, Granjeiro JM. 2011. Cytocompatibility of chitosan and collagen-chitosan scaffolds for tissue engineering. *Polímeros*. 21(1):1-6.
- Fransson, H., & Dawson, V. (2023). Tooth survival after endodontic treatment. *International Endodontic Journal*, 56(S2), 140–153.
- Gadiya, P., Girnar, J., Dhattrak, P., dan Ghorpade, R. (2021). Review on Modern Day Irrigation Methods in Endodontics. *AIP Conf. Proc.* 2358, 1–9.
- Gopikrishna, V. (2021). *Grossman's Endodontic Practice* : 14th Edition. WoltersKluwer. New Delhi
- Gronwald, B., Kozłowska, L., Kijak, K., Lietz-Kijak, D., Skomro, P., Gronwald, K., & Gronwald, H. (2023). Nanoparticles in Dentistry—Current Literature Review. *Coatings*, 13(1), 102.
- Gupta, A., Pareek, A., dan Kapila, H. (2021). Ultrasonics in Endodontics: A review. *Int. J. Health Sci.* 5(S1), 264-277.
- Hau, R. R. H., Masturi, M., Yulianti, I., Hau, S. K., & Talu, S. D. (2016). *Modulus Elastisitas Bambu Betung Dengan Variabel Panjang*. V, SNF2016-CIP-37-SNF2016-CIP-42.
- Hosseini, S., Kassae, M. Z., Elahi, S. H., dan Bolhari, B. (2016). A New Nano-Chitosan Irrigant with Superior Smear Layer Removal and Penetration. *Nanochem Res.* 1(2): 150-6.
- Husniati dan Oktarina, E. (2014). Sintesis Nanopartikel Kitosan dan Pengaruhnya terhadap Inhibisi Bakteri Pembusuk Jus Nenas. *JDPI*. 25(2), 89-95
- Kamble AB, Abraham S, Kakde DD, Shashidhar C, Mehta DL. (2017). Scanning Electron Microscopic Electron Evaluation of Efficacy of 17% Ethylenediaminetetraacetic Acid and Chitosan for Smear Layer Removal with Ultrasonics: An In vitro Study. *Contemporary Clinical Dentistry*.; 8(4): 621–626.
- Khan, A., & Alamry, K. A. (2021). Recent advances of emerging green chitosan-based biomaterials with potential biomedical applications: A review. *Carbohydrate Research*, 506(June), 108368.
- Kapoor Vivek, Ruchi Singla, Rajni Kapoor. (2020). Endodontic Management of Mandibular Second Premolar with Three Roots: A Case Report. *International Journal of Clinical Preventive Dentistry*

- Khoroushi M, Rafiei E. Effect of thermocycling and water storage on bond longevity of two self-etch adhesives. *Gen Dent.* 2013;61(3):39-44
- Lambros M, Tran TH, Fei Q, Nicolaou M. Citric Acid: A Multifunctional Pharmaceutical Excipient. *Pharmaceutics.* 2022 Apr 30;14(5):972.
- Huang, L., Li, B., Huang, Y., Zhou, X., Zhang, X., & Gong, Q. (2022). Micro-CT Evaluation of Different Root Canal Irrigation Protocols on the Removal of Accumulated Hard Tissue Debris: A Systematic Review and Meta-Analysis. *J. Clin. Med.*, 11(20).
- Machnick, T.K., Mahmoud Torabinejad, Carlos A. Munoz, Shahrokh Shabahang. (2003). Effect of MTAD on Flexural Strength and Modulus of Elasticity of Dentin, *Journal of Endodontics*, Volume 29, Issue 11, Pages 747-750, ISSN 0099-2399
- Malhan, S., Bansal, C., & Johar, S. (2021). Root Canal Irrigants: A review. *Journal of Health Sciences*, 5(April), 134–142.
- Mohammadi Z, Shalavi S, Jafarzadeh H. Ethylenediaminetetraacetic acid in endodontics. *Eur J Dent.* 2013 Sep;7(Suppl 1):S135-S142.
- Mohammadi, Z., Shalavi, S., Yaripour, S., Kinoshita, J. I., Manabe, A., Kobayashi, M., Giardino, L., Palazzi, F., Sharifi, F., & Jafarzadeh, H. (2019). Smear layer removing ability of root canal irrigation solutions: A review. *Journal of Contemporary Dental Practice*, 20(3), 395–402. h
- Muslov, S. A., & Lisovenko, D. S. (2018). Elastic anisotropy of dentin and enamel. *Letters on Materials*, 8(3), 288–293.
- Nassar, M.; Awawdeh, L.; Jamleh, A.; Sadr, A.; Tagami, J. (2011). Adhesion of Epiphany self-etch sealer to dentin treated with intracanal irrigating solutions. *J. Endod.*, 37, 228–230.
- Nikhil, V., Jaiswal, S., Bansal, P., Arora, R., Raj, S., dan Malhotra, P. (2016). Effect of Phytic Acid, Ethylenediaminetetraacetic Acid, and Chitosan Solutions on Microhardness of The Human Radicular Dentin. *J Conserv Dent.* Mar-Apr;19(2):179-83.
- Nugroho, A., Kusumo, H., Mulyawati, E., & Ratih, D. N. (2020). *Apical Sealing Ability of Epoxy Resin Sealer after Application of Final Irrigation Using EDTA and Chitosan Nanoparticle with Different Contact Time.* 4(1), 6–11.
- Pantow, F.C., Krista, V.C., Damajanti H., 2015, Perbedaan Kekuatan Transversal Basis Resin Krilik Polimerisasi Panas pada Perendaman Minuman

Berakohol dan Aquades, *J. e-gigi*, 3(2).

- Park, S. Y., Kang, M. K., Choi, H. W., dan Shon, W. J. (2020). Comparative Analysis of Root Canal Filling Debris and Smear Layer Removal Efficacy Using Various Root Canal Activation Systems During Endodontic Retreatment. *Medicina*. 56, 615.
- Patel, S. dan Barnes, J.J. (2020). *The Principles of Endodontics*. 3rd ed. OxfordUniversity Press. OxfordPermatasari, R., Radya, M., & Kamal, P. (2022). Perbedaan Penggunaan Sealer Berbahan Dasar Resin dan Mineral Trioxide Aggregate terhadap Kerapatan Obturasi Saluran Akar. *Mderj*, 2(1), 1–07.
- Peeters, H. H., Judith, E. T., Suardita, K., & Mooduto, L. (2022). Visualization of bubbles generation of electrical-driven EndoActivator tips during solutions activation in a root canal model and a modified extracted tooth: A pilot study. *Dental Journal (Majalah Kedokteran Gigi)*, 55(2), 71-75.
- Permatasari, R., Radya, M., & Kamal, P. (2022). Perbedaan Penggunaan Sealer Berbahan Dasar Resin dan Mineral Trioxide Aggregate terhadap Kerapatan Obturasi Saluran Akar. *Mderj*, 2(1), 1–07.
- Plotino, G., Grande, N. M., Bedini, R., Pameijer, C. H., & Somma, F. (2007). Flexural properties of endodontic posts and human root dentin. *Dental Materials*, 23(9), 1129–1135.
- Puspita, D., Djuanda, R., & Evelynna, A. (2019). Perbedaan Kebersihan Sepertiga Apikal Saluran Akar dari Smear Layer Menggunakan Sistem Aktivasi Ultrasonik dan Sonik. *SONDE (Sound of Dentistry)*, 4(1), 26–32.
- Qi F., Huang H., Wang M., Rong W., Wang J. (2002). Applications of antioxidants in dental procedures. *Antioxidants* 11:2492
- Raducka, M., Piszko, A., Piszko, P. J., Jawor, N., Dobrzyński, M., Grzebieluch, W., Mikulewicz, M., & Skośkiewicz-Malinowska, K. (2023). Narrative Review on Methods of Activating Irrigation Liquids for Root Canal Treatment. *Applied Sciences (Switzerland)*, 13(13).
- Ragul, P., Dhanraj, M., & Jain, A. R. (2018). Irrigation technique used in cleaning and shaping during endodontic treatment-A review. *Drug Discov. Today*, 10.
- Ratih, D. N., Sari, N. I., Santosa, P., & Kaswati, N. M. N. (2020). Time-Dependent Effect of Chitosan Nanoparticles as Final Irrigation on the Apical Sealing Ability and Push-Out Bond Strength of Root Canal Obturation. *International Journal of Dentistry*, 2020.

- Ratih, D. N., Enggardipta, R. A., dan Kartikaningtyas, A. T. (2020). The Effect of Chitosan Nanoparticle as A Final Irrigation Solution on The Smear layer Removal, Micro-hardness and Surface Roughness of Root Canal Dentin. *Open Dent. J.* 14(1):19–26.
- Ratih, D.N., Mulyawati, E., Santi, R.K., dan Kristanti, Y. (2022). Antibacterial and Cytotoxicity of Root Canal Sealer with Addition of Chitosan Nanoparticle at Various Concentrations. *Eur J Dent.* 1-5
- Ratih DN, Widyastuti A, Monika A. Effect of Final Irrigation Solutions on Mechanical Properties of Root Canal Dentine Running title: Final Irrigation on Mechanical Properties. *Eur Endod J.* 2024 Jul 1
- Sahebi, S., Nabavizadeh, M., Dolatkah, V. and Jamshidi, D., 2012. Short term effect of calcium hydroxide, mineral trioxide aggregate and calcium-enriched mixture cement on the strength of bovine root dentin. *Iranian endodontic journal*, 7(2), pp.57-9
- Sakaguchi, R. L., Ferracane, J. L., & Powers, J. M. (2018). Craig's restorative dental materials. In *Craig's Restorative Dental Materials* (Fourteenth). Elsevier Inc.
- Sarkees, M., dan Maarrawi, K. (2020). Chitosan: A Natural Substitute of EDTA Solution for Final Irrigation in Endodontics Treatment. *Nigerian Journal of Clinical Practice.* 23(5), 697-703.
- Shashikumar, G., Hinduja, D., Mujeeb A., Raghu, K.N., dan Ashwini, K.S. (2021). Comparative Evaluation of Smear Layer Removal after The Use of NaOCl with 17% EDTA versus Silver Citrate as Root Canal Irrigant – a SEM Study. *Eur J Pharm Med Res.* 8(8): 659-662.
- Shinde, M. R., & Winnier, J. (2020). *Journal of Drug Delivery and Therapeutics Health Benefits and Application of Stevia rebaudiana Bertoni in Dentistry.* 10, 271–274.
- Silva, P.V., Guedes, D.F.C., Nakadi, F.V., Pecora, J.D., Cruz-Filho, A.M., (2012) Chitosan: A new solution for removal. *International Endodontic Journal.* 46(4): 389–393.
- Siqueira, J.F. dan Rocas, I.N. (2022). *Treatment of Endodontic Infections.* Quintessenz Verlags-GmbH. Berlin.
- Souza, R. A. de, Castro, F. P. L. de, & Pires, O. J. (2022). Research of the majormethods and clinical outcomes of irrigation in endodontics: a systemat icreview. *MedNEXT J Med Health Sci*, 3(S3).

- Tashkandi, N., & Alghamdi, F. (2022). Effect of Chemical Debridement and Irrigant Activation on Endodontic Treatment Outcomes: An Updated Overview. *Cureus*
- Thbayh, D. K., Palusiak, M., Viskolcz, B., & Fiser, B. (2023). Comparative study of the antioxidant capability of EDTA and Irganox. *Heliyon*, 9(5), e16064.
- Titato, P. C. G., Zancan, R. F., Pedrinha, V. F., de Andrade, F. B., Vivan, R. R., dan Duarte, M. A. H. (2020). Influence of EDTA and Its Association with Benzalkonium Chloride on Enterococcus Faecalis Adhesion to Dentin. *Int. J. Odontostomat.* 14(4), 632-638.
- Tonini, R., Giovarruscio, M., Gorni, F., Ionescu, A., Brambilla, E., Irina, M.M.,Luzi, A., dkk. (2020). In Vitro Evaluation of Antibacterial Properties and Smear Layer Removal/Sealer Penetration of a Novel Silver-Citrate Root Canal Irrigant. *Materials*, 13(194): 1-15
- Tjäderhane L., Nascimento F.D., Breschi L., Mazzoni A., Tersariol I.L.S., Geraldeli S., Tezvergil-Mutluay A., Carrilho M.R., Carvalho R.M., Tay F.R., Pashley D.H. (2013). Optimizing dentin bond durability: control of collagen degradation by matrix metalloproteinases and cysteine cathepsins. *Dent. Mater.* 29(1):116-135
- Valsan, S. dan Antony, S.D.P. (2022). Interaction of Endodontic Irrigants: A Review. *Int. J. Health Sci.* 6(S2): 4282-4294.
- Wahjuningrum, D. A., Raymond Kandow, M. Rulianto, Kevin Prayogo. (2020). Irrigation solution pattern in root canal treatment (irrigation solution pattern in root canal between negative pressure system by endovac and sonic activation by eddy system). *Journal of International Dental and Medical Research* ISSN 1309-100X 111–115.
- Wenhao, Z. (2021). Influence of Temperature and Concentration on Viscosity of Complex Fluids. *J. Phys.: Conf. Ser.* 19(65): 1-6.
- Widyastuti, A., & Santosa, P. (2018). Perawatan saluran akar dengan instrumen putar dan restorasi resin komposit penguat fiber. *MKGK (Majalah Kedokteran Gigi Klinik)(Clinical Dental Journal) UGM*, 4(1), 9–19.
- Yuniva Hasna S., Siswomihardjo, W., & Sunarintyas, S. (2019). Pengaruh Lama Perendaman E-Glass Fiber Reinforced Composite dalam Obat Kumur Terhadap Kekuatan Fleksural. *Jurnal Material Kedokteran Gigi*, 8(1), 30.

- Yusan, L. Y., Nailufa, Y., dan Subagio, H. (2023). Isolation and Characterization of Chitosan Nanoparticles from Crab Shell Waste (*Portunus Pelagicus*). *International Journal of Applied Pharmaceutics*. 16(2), 358-363.
- Zaparolli D, Saquy PC, Cruz-Filho AM. Effect of sodium hypochlorite and EDTA irrigation, individually and in alternation, on dentin microhardness at the furcation area of mandibular molars. *Braz Dent J*; 2012; 23 (6): 654-656.
- Zhang YR, Du W, Zhou XD, Yu HY. Review of research on the mechanical properties of the human tooth. *Int J Oral Sci*. 2014 Jun;6(2):61-9. PMID: 24743065
- Zoe, L. H., David, S. R., dan Rajabalaya, R. (2023). Chitosan Nanoparticle Toxicity: A Comprehensive Literature Review of *In Vivo* and *In Vitro* Assessments for Medical Applications. *Elsevier*, 83-106.