

Literaturverzeichnis | Bibliographie

WISSENSCHAFT | SCIENCE DIMENSIONS 4 2024

Hyaluronsäure in der nicht-chirurgischen Parodontaltherapie L'acide hyaluronique dans le traitement parodontal non chirurgical

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1. Simoni RD, Hill RL, Vaughan M, Hascall V. The Discovery of Hyaluronan by Karl Meyer. *Journal of Biological Chemistry*. 2002;277(39). doi: [https://doi.org/10.1016/S0021-9258\(18\)36679-1](https://doi.org/10.1016/S0021-9258(18)36679-1).
2. Suchánek J. Editorial of Special Issue "Hyaluronic Acid in Human Medicine. *Biomolecules*. 2022;12. doi: 10.3390/biom12101495. PubMed Central PMCID: PMC9599049.
3. J Y Lee APS. Hyaluronan: a multifunctional, megaDalton, stealth molecule. *Curr Opin Cell Biol*. 2000;12(5):581-6. doi: 10.1016/s0955-0674(00)00135-6.
4. Dianhua Jiang JL, and Paul W. Noble. Hyaluronan as an Immune Regulator in Human Diseases. *Physiological Review*. 2011;91(1):221-64. doi: <https://doi.org/10.1152/physrev.00052.2009>.
5. Shirakata Y, Nakamura T, Setoguchi F, Imafuji T, Shinohara Y, Matsumura S, et al. Histological evaluation of nonsurgical periodontal treatment with and without the use of sodium hypochlorite / amino acids and cross-linked hyaluronic acid gels in dogs. *Clin Oral Investig*. 2024;28(5):281. Epub 20240427. doi: 10.1007/s00784-024-05674-7. PubMed PMID: 38676852; PubMed Central PMCID: PMC11055767.
6. Aya KL, Stern R. Hyaluronan in wound healing: rediscovering a major player. *Wound Repair Regen*. 2014;22(5):579-93. doi: 10.1111/wrr.12214. PubMed PMID: 25039417.
7. P. Saranraj AAN, M.A. Naidu. Hyaluronic Acid Production and its Applications - A Review *International Journal of Pharmaceutical & Biological Archives*. 2013;4:853-9. doi: 10.22377/ijpba.v4i5.1126.
8. Kitchen JR, Cysyk RL. Synthesis and release of hyaluronic acid by Swiss 3T3 fibroblasts. *Biochem J*. 1995;309 (Pt 2)(Pt 2):649-56. doi: 10.1042/bj3090649. PubMed PMID: 7626032; PubMed Central PMCID: PMC1135780.
9. De Boulle K, Glogau R, Kono T, Nathan M, Tezel A, Roca-Martinez JX, et al. A review of the metabolism of 1,4-butanediol diglycidyl ether-crosslinked hyaluronic acid dermal fillers. *Dermatol Surg*. 2013;39(12):1758-66. Epub 20130813. doi: 10.1111/dsu.12301. PubMed PMID: 23941624; PubMed Central PMCID: PMC4264939.
10. Behrangi E, Dehghani A, Sheikhzadeh F, Goodarzi A, Roohaninasab M. Evaluation and comparison of the efficacy and safety of cross-linked and non-cross-linked hyaluronic acid in combination with botulinum toxin type A in the treatment of atrophic acne scars: A double-blind randomized clinical trial. *Skin Res Technol*. 2024;30(1):e13541. doi: 10.1111/srt.13541. PubMed PMID: 38174839; PubMed Central PMCID: PMC10765352.
11. Kwon T, Lamster IB, Levin L. Current Concepts in the Management of Periodontitis. *Int Dent J*. 2021;71(6):462-76. Epub 20210219. doi: 10.1111/idj.12630. PubMed PMID: 34839889; PubMed Central PMCID: PMC9275292.
12. Herbert F. Wolf KHR, Edith M. Rateitschak-Plüss. *Parodontologija*. 3rd edition ed. Jastrebarsko: Naklada Slap; 2009 2009. 536 p.
13. Srivastava D, Natoli V, Srivastava KC, Alzoubi IA, Nagy AI, Hamza MO, et al. Novel Approach to Dental Biofilm Management through Guided Biofilm Therapy (GBT): A Review. *Microorganisms*. 2021;9(9). Epub 20210916. doi: 10.3390/microorganisms9091966. PubMed PMID: 34576863; PubMed Central PMCID: PMC8468826.

14. Graziani F, Karapetsa D, Alonso B, Herrera D. Nonsurgical and surgical treatment of periodontitis: how many options for one disease? *Periodontol* 2000. 2017;75(1):152-88. doi: 10.1111/prd.12201. PubMed PMID: 28758300.
15. Longaker MT, Chiu ES, Adzick NS, Stern M, Harrison MR, Stern R. Studies in fetal wound healing. V. A prolonged presence of hyaluronic acid characterizes fetal wound fluid. *Ann Surg.* 1991;213(4):292-6. doi: 10.1097/00000658-199104000-00003. PubMed PMID: 2009010; PubMed Central PMCID: PMC1358347.
16. Mast BA, Diegelmann RF, Krummel TM, Cohen IK. Hyaluronic acid modulates proliferation, collagen and protein synthesis of cultured fetal fibroblasts. *Matrix.* 1993;13(6):441-6. doi: 10.1016/s0934-8832(11)80110-1. PubMed PMID: 8309423.
17. Asparuhova MB, Kiryak D, Eliezer M, Mihov D, Sculean A. Activity of two hyaluronan preparations on primary human oral fibroblasts. *J Periodontal Res.* 2019;54(1):33-45. Epub 20180927. doi: 10.1111/jre.12602. PubMed PMID: 30264516; PubMed Central PMCID: PMC6586051.
18. Ramanauskaite E, Machiulskiene V, Dvyliene UM, Eliezer M, Sculean A. Clinical Evaluation of a Novel Combination of Sodium Hypochlorite/Amino Acid and Cross-linked Hyaluronic Acid Adjunctive to Non-surgical Periodontal Treatment: A Case Series. *Oral Health Prev Dent.* 2023;21(1):279-84. doi: 10.3290/j.ohpd.b4347453. PubMed PMID: 37724897.
19. Ramanauskaite E, Machiulskiene V, Shirakata Y, Dvyliene UM, Nedzelskiene I, Sculean A. Clinical evaluation of sodium hypochlorite/amino acids and cross-linked hyaluronic acid adjunctive to non-surgical periodontal treatment: a randomized controlled clinical trial. *Clin Oral Investig.* 2023;27(11):6645-56. Epub 20230923. doi: 10.1007/s00784-023-05271-0. PubMed PMID: 37740107; PubMed Central PMCID: PMC10630230.
20. Diehl D, Friedmann A, Liedloff P, Jung RM, Sculean A, Bilhan H. Adjunctive Application of Hyaluronic Acid in Combination with a Sodium Hypochlorite Gel for Non-Surgical Treatment of Residual Pockets Reduces the Need for Periodontal Surgery-Retrospective Analysis of a Clinical Case Series. *Materials (Basel).* 2022;15(19). Epub 20220920. doi: 10.3390/ma15196508. PubMed PMID: 36233855; PubMed Central PMCID: PMC9571901.
21. Jurczyk K, Nietzsche S, Ender C, Sculean A, Eick S. In-vitro activity of sodium-hypochlorite gel on bacteria associated with periodontitis. *Clin Oral Investig.* 2016;20(8):2165-73. Epub 20160112. doi: 10.1007/s00784-016-1711-9. PubMed PMID: 26759339.
22. Schmidlin PR, Fujioka-Kobayashi M, Mueller HD, Sculean A, Lussi A, Miron RJ. Effects of air polishing and an amino acid buffered hypochlorite solution to dentin surfaces and periodontal ligament cell survival, attachment, and spreading. *Clin Oral Investig.* 2017;21(5):1589-98. Epub 20160905. doi: 10.1007/s00784-016-1950-9. PubMed PMID: 27596604.
23. Hägi TT, Laugisch O, Ivanovic A, Sculean A. Regenerative periodontal therapy. *Quintessence Int.* 2014;45(3):185-92. doi: 10.3290/j.qi.a31203. PubMed PMID: 24570985.
24. Ramanauskaite E, Machiulskiene Visockiene V, Shirakata Y, Friedmann A, Pereckaite L, Balciunaite A, et al. Microbiological Effects of Sodium Hypochlorite/-Amino Acids and Cross-linked Hyaluronic Acid Adjunctive to Non-surgical Periodontal Treatment. *Oral Health Prev Dent.* 2024;22:171-80. Epub 20240430. doi: 10.3290/j.ohpd.b5281925. PubMed PMID: 38687029.
25. Binshabab M, Aabed K, Alotaibi F, Alwaqid M, Alfraidy A, Alharthi S. Antimicrobial efficacy of 0.8% Hyaluronic Acid and 0.2% Chlorhexidine against Porphyromonas gingivalis strains: An in-vitro study. *Pak J Med Sci.* 2020;36(2):111-4. doi: 10.12669/pjms.36.2.1456. PubMed PMID: 32063942; PubMed Central PMCID: PMC6994868.
26. Rajan P, Dusanapudi L, Kumar C, Nair D. Hyaluronic acid - a simple, unusual polysaccharide: A potential mediator for periodontal regeneration. *Universal Research Journal of Dentistry.* 2013. doi: 10.4103/2249-9725.123973.
27. Olczyk P K-VK, Winsz-Szczotka K, Kuźnik-Trocha K, Olczyk K. Hyaluronan: Structure, metabolism, functions, and role in wound healing. *Advances in Hygiene and Experimental Medicine.* 2008(62).

28. Zhu X, von Werdt L, Zappala G, Sculean A, Eick S, Stahli A. In vitro activity of hyaluronic acid and human serum on periodontal biofilm and periodontal ligament fibroblasts. *Clin Oral Investig.* 2023;27(9):5021-9. Epub 20230628. doi: 10.1007/s00784-023-05121-z. PubMed PMID: 37380794; PubMed Central PMCID: PMC10492760.
29. Bertl K, Bruckmann C, Isberg PE, Klinge B, Gotfredsen K, Stavropoulos A. Hyaluronan in non-surgical and surgical periodontal therapy: a systematic review. *J Clin Periodontol.* 2015;42(3):236-46. Epub 20150309. doi: 10.1111/jcpe.12371. PubMed PMID: 25640222.
30. Eliezer M, Imber JC, Sculean A, Pandis N, Teich S. Hyaluronic acid as adjunctive to non-surgical and surgical periodontal therapy: a systematic review and meta-analysis. *Clin Oral Investig.* 2019;23(9):3423-35. Epub 20190723. doi: 10.1007/s00784-019-03012-w. PubMed PMID: 31338632.