

Ausgabe: Prophylaxe Journal 6/2018

Thema: Mundgesundheit und Allgemeinerkrankungen – Welche Zusammenhänge gibt es?

Autor: Prof. Dr. Dirk Ziebolz, M.Sc.

Literatur

1. Page RC, Kornman KS. The pathogenesis of human periodontitis: an introduction. *Periodontol 2000* 1997;14:9-11.
2. Meyle J, Chapple I. Molecular aspects of the pathogenesis of periodontitis. *Periodontol 2000* 2015;69:7-17.
3. Linden GJ, Lyons A, Scannapieco FA. Periodontal systemic associations: review of the evidence. *J Clin Periodontol* 2013;40 (Suppl 14):8-19
4. Kumar PS. From focal sepsis to periodontal medicine: a century of exploring the role of the oral microbiome in systemic disease. *J Physiol* 2017;595(2):465-476.
5. Mealey BL, Ocampo GL. Diabetes mellitus and periodontal disease. *Periodontol 2000* 2007;44:127-53.
6. Lalla E, Papapanou PN. Diabetes mellitus and periodontitis: a tale of two common interrelated diseases. *Nat Rev Endocrinol* 2011;7:738-48.
7. Chapple IL, Genco R; Working group 2 of the joint EFP/AAP workshop. Diabetes and periodontal diseases: consensus report of the Joint EFP/AAP Workshop on periodontitis and systemic diseases. *J Periodontol* 2013;40 (Suppl 14):106-12.
8. Tonetti MS, Van Dyke TE; Working group 1 of the joint EFP/AAP workshop. Periodontitis and atherosclerotic cardiovascular disease: consensus report of the Joint EFP/AAP Workshop on Periodontitis and Systemic Diseases. *J Clin Periodontol* 2013;40 (Suppl 14):24-9.
9. Kerschull M, Demmer RT, Papapanou PN. "Gum bug, leave my heart alone!"-- epidemiologic and mechanistic evidence linking periodontal infections and atherosclerosis. *J Dent Res* 2010;89:879-902
10. de Pablo P, Chapple IL, Buckley CD, Dietrich T. Periodontitis in systemic rheumatic diseases. *Nat Rev Rheumatol* 2009;5:218–224.
11. Kaur S, White S, Bartold PM. Periodontal disease and rheumatoid arthritis: a systematic review. *J Dent Res* 2013; 92:399-408.
12. Socransky SS, Haffajee AD. The bacterial etiology of destructive periodontal disease: current concepts. *J Periodontol* 1992;63 (Suppl 4): 322–331.
13. Marsh PD, Devine DA. How is the development of dental biofilms influenced by the host? *J Clin Periodontol* 2011; 38 (Suppl 11): 28–35
14. Socransky SS, Haffajee AD, Cugini MA, Smith C, Kent RL. Microbial complexes in subgingival plaque. *J Clin Periodontol* 1998; 25:134–144.
15. Hajishengallis G. Periodontitis: from microbial immune subversion to systemic inflammation. *Nat Rev Immunol* 2014;15:30–44.
16. Hirschfeld J, Kawai T. Oral Inflammation and Bacteremia: Implications for Chronic and Acute Systemic Diseases Involving Major Organs. *Cardiovasc Hematol Disord Drug Targets* 2015;15 :70-84.
17. Nesse W, Abbas F, van der Ploeg I, Spijkervet FK, Dijkstra PU, Vissink A. Periodontal inflamed surface area: quantifying inflammatory burden. *J Clin Periodontol* 2008;35:668–673.
18. Lundberg K, Wegner N, Yucel-Lindberg T, Venables PJ: Periodontitis in RA-the citrullinated enolase connection. *Nat Rev Rheumatol* 2010;6:727–730.
19. Wegner N, Wait R, Sroka A, Eick S, Nguyen KA, Lundberg K et al.. Peptidylarginine deiminase from *Porphyromonas gingivalis* citrullinates human fibrinogen and α -enolase: implications for autoimmunity in rheumatoid arthritis. *Arthritis Rheum* 2010;62:2662–2672.

20. Awano S, Ansai T, Takata Y, Soh I, Akifusa S, Hamasaki T et al.. (2008): Oral health and mortality risk from pneumonia in the elderly. *J Dent Res* 2008;87:334–339.
21. Paju S, Scannapieco FA. Oral biofilms, periodontitis, and pulmonary infections. *Oral Dis* 2007;13:508–512.
22. Peter KP, Mute BR, Doiphode SS, Bardapurkar SJ, Borkar MS, Raje DV Association between periodontal disease and chronic obstructive pulmonary disease: a reality or just a dogma? *J Periodontol* 2013;84:1717–1723.
23. Deschner J, Haak T, Jepsen S, Kocher T, Mehnert H, Meyle J, Tschöpe D. Diabetes mellitus and periodontitis. Bidirectional relationship and clinical implications. A consensus document. *Internist* 2011;52:466-77.
24. Preshaw PM, Foster N, Taylor JJ. Cross-susceptibility between periodontal disease and type 2 diabetes mellitus: an immunobiological perspective. *Periodontol* 2000 2007;45:138-57.
25. WHO (World Health Organisation). What diagnostic tests should be used to define glycaemic status? Report of a WHO/IDF consultation: Definition and diagnosis of diabetes mellitus and intermediate hyperglycemia. Geneva, Switzerland: WHO; 2006. p29-34.
26. Müller-Wieland D, Petermann A, Nauck M, Heinemann L, Kerner W, Müller U, Landgraf R. Definition, Klassifikation und Diagnostik des Diabetes mellitus. *Diabetologie und Stoffwechsel* 2016;11:78-81.
27. Borgnakke WS. Does Treatment of Periodontal Disease Influence Systemic Disease? *Dent Clin North Am* 2015;59:885-917.
28. Ziebolz D, Bauwe I, Schmidt J, Kottmann T, Rinke S, Schmalz G. Diabetes-screening in dental practice using the Find-Risk questionnaire – a practice based pilot study. *Oral Health Prevent Dent* 2018 [in press].
29. Papageorgiou SN, Hagner M, Nogueira AVB, Franke A, Jäger A, Deschner J. Inflammatory bowel disease and oral health: systematic review and a meta-analysis. *J Clin Periodontol* 2017;44:382–93.
30. Bartold, PM, Marshall RI, Haynes DR. Periodontitis and rheumatoid arthritis: a review. *J Periodontol* 2005;76:2066–2074.
31. Persson GR. Rheumatoid arthritis and periodontitis – inflammatory and infectious connections. Review of the literature. *J Oral Microbiol* 2012;4:11829
32. da Silva AP, Bissada NF. Arthritis and Periodontitis: An Association Debated for Over Two Centuries. *Curr Rheumatol Rev* 2016;12:202-207
33. Kobayashi T, Okada M, Ito S, Kobayashi D, Ishida K, Kojima A, Narita I, Murasawa A, Yoshier H. Assessment of interleukin-6 receptor inhibition therapy on periodontal condition in patients with rheumatoid arthritis and chronic periodontitis. *J Periodontol* 2014;85:57–67.
34. Ziebolz D, Rupprecht A, Schmickler J, Bothmann L, Krämer J, Patschan D, Müller GA, Mausberg RF, Schmidt J, Schmalz G, Patschan S. Association of different immunosuppressive medications with periodontal condition in patients with rheumatoid arthritis: Results from a cross-sectional study. *J Periodontol* 2018;89:1310-1317.
35. Wolff B, Berger T, Frese C, Max R, Blank N, Lorenz HM, Wolff D. Oral status in patients with early rheumatoid arthritis: a prospective, case-control study. *Rheumatology* 2014;53:526–531.
36. Pischon N, Pischon T, Kröger J, Gülmez E, Kleber BM, Bernimoulin JP, Landau H, Brinkmann PG, Schlattmann P, Zernicke J, Buttgereit F, Detert J. Association among rheumatoid arthritis, oral hygiene, and periodontitis. *J Clin Periodontol* 2008;79:979-986.

37. Kaur S, Bright R, Proudman SM, Bartold PM. Does periodontal treatment influence clinical and biochemical measures for rheumatoid arthritis? A systematic review and meta-analysis. *Semin Arthritis Rheum* 2014;44:113–122.
38. Silvestre FJ, Silvestre-Rangil J, Bagan L, Bagan JV. Effect of nonsurgical periodontal treatment in patients with periodontitis and rheumatoid arthritis: A systematic review. *Med Oral Patol Oral Cir Bucal* 2016;21:e349-54.
39. Nesse W, Dijkstra PU, Abbas F, Spijkervet FK, Stijger A, Tromp JA et al.. Increased prevalence of cardiovascular and autoimmune diseases in periodontitis patients: a cross-sectional study. *J Periodontol* 2010;81:1622–1628.
40. Moen K, Brun JG, Valen M, Skartveit L, Eribe EK, Olsen I, Jonsson R. Synovial inflammation in active rheumatoid arthritis and psoriatic arthritis facilitates trapping of a variety of oral bacterial DNAs. *Clin Exp Rheumatol* 2006;24:656–663.
41. Martinez-Martinez RE, Abud-Mendoza C, Patiño-Marin N, Rizo-Rodríguez JC, Little JW, Loyola-Rodríguez JP. Detection of periodontal bacterial DNA in serum and synovial fluid in refractory rheumatoid arthritis patients. *J Clin Periodontol* 2009;36:1004–1010.
42. Reichert S, Haffner M, Keyßer G, Schäfer C, Stein JM, Schaller HG et al.. Detection of oral bacterial DNA in synovial fluid. *J Clin Periodontol* 2013;40:591–598.
43. Pischon N, Röhner E, Hocke A, N'Guessan P, Müller HC, Matziolis G et al.. Effects of *Porphyromonas gingivalis* on cell cycle progression and apoptosis of primary human chondrocytes. *Ann Rheum Dis* 2009;68:1902–1907.
44. Röhner E, Detert J, Kolar P, Hocke A, N'Guessan P, Matziolis G et al.. Induced apoptosis of chondrocytes by *Porphyromonas gingivalis* as a possible pathway for cartilage loss in rheumatoid arthritis. *Calcif Tissue Int* 2010;87:333–340.
45. McGraw WT, Potempa J, Farley D, Travis J. Purification, characterization, and sequence analysis of a potential virulence factor from *Porphyromonas gingivalis*, peptidylarginine deiminase. *Infect and Immun* 1999;67:3248–3256.
46. Goulas T, Mizgalska D, Garcia-Ferrer I, Kantyka T, Guevara T, Szmigielski B et al.. Structure and mechanism of a bacterial host-protein citrullinating virulence factor, *Porphyromonas gingivalis* peptidylarginine deiminase. *Sci Rep* 2015;5:11969.
47. Tonetti MS, Eickholz P, Loos BG, Papapanou P, van der Velden U, Armitage G, Bouchard P, et al.. Principles in prevention of periodontal diseases: Consensus report of group 1 of the 11th European Workshop on Periodontology on effective prevention of periodontal and peri-implant diseases. *J Clin Periodontol* 2015;42 (Suppl 16):5-11.
48. Lang NP, Suvan JE, Tonetti MS. Risk factor assessment tools for the prevention of periodontitis progression a systematic review. *J Clin Periodontol* 2015;42 (Suppl 16):59-70.
49. Caton JG, Armitage G, Berglundh T, Chapple ILC, Jepsen S, Kornman KS, Mealey BL, Papapanou PN, Sanz M, Tonetti MS. A new classification scheme for periodontal and peri-implant diseases and conditions - Introduction and key changes from the 1999 classification. *J Periodontol* 2018;89 (Suppl 1):1-8.
50. Axelsson P, Lindhe J. Effect of controlled oral hygiene procedures on caries and periodontal disease in adults. Results after 6 years. *J Clin Periodontol* 1981;8:239- 248.
51. Axelsson P, Lindhe J, Nystroem B. On the prevention of caries and periodontal disease. *J Clin Periodontol* 1991;18:182-189.
52. Axelsson P, Nyström B, Lindhe J. The long-term effect of a plaque control program on tooth mortality, caries and periodontal disease in adults. Results after 30 years of maintenance. *J Clin Periodontol* 2004;31:749-57.

53. DG PARO, DGZMK. S3-Leitlinie: Häusliches mechanisches Biofilmmangement in der Prävention und Therapie der Gingivitis. AWMF-Regnr: 083-022; Nov. 2018.
54. DG PARO, DGZMK. S3-Leitlinie: Häusliches chemisches Biofilmmangement in der Prävention und Therapie der Gingivitis. AWMF-Regnr: 083-016; Nov. 2018.
55. Lang NP, Tonetti MS. Periodontal risk assessment (PRA) for patients in supportive periodontal therapy (SPT). *Oral Health Prev Dent* 2003;1:7-16.
56. Costa FO, Cota LO, Lages EJ, Lima Oliveira AP, Cortelli SC, Cortelli JR, Lorentz TC, Costa JE. Periodontal risk assessment model in a sample of regular and irregular compliers under maintenance therapy: a 3-year prospective study. *J Periodontol* 2012;83:292-300.