

Mundgesundheit von Patienten unter Stammzelltransplantation

Mikrobiom und orale Mukositis

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Literaturhinweise:

1. Sonis, S.T., *The pathobiology of mucositis*. Nat Rev Cancer, 2004. **4**(4): p. 277-84.
2. Villa, A. and S.T. Sonis, *Mucositis: pathobiology and management*. Curr Opin Oncol, 2015. **27**(3): p. 159-64.
3. Elting, L.S., D.M. Keefe, S.T. Sonis, et al., *Patient-reported measurements of oral mucositis in head and neck cancer patients treated with radiotherapy with or without chemotherapy: demonstration of increased frequency, severity, resistance to palliation, and impact on quality of life*. Cancer, 2008. **113**(10): p. 2704-13.
4. Sonis, S.T., *Oral mucositis*. Anticancer Drugs, 2011. **22**(7): p. 607-12.
5. Wang, Y., X. Zhou, and X. Xu, *Oral microbiota: an overlooked etiology for chemotherapy-induced oral mucositis?* J Formos Med Assoc, 2015. **114**(4): p. 297-9.
6. Sonis, S.T., L.S. Elting, D. Keefe, et al., *Perspectives on cancer therapy-induced mucosal injury: pathogenesis, measurement, epidemiology, and consequences for patients*. Cancer, 2004. **100**(9 Suppl): p. 1995-2025.
7. Esperou, H., A. Brunot, F. Roudot-Thoraval, et al., *Predicting the costs of allogeneic sibling stem-cell transplantation: results from a prospective, multicenter, French study*. Transplantation, 2004. **77**(12): p. 1854-8.
8. Jones, J.A., M.H. Qazilbash, Y.C. Shih, et al., *In-hospital complications of autologous hematopoietic stem cell transplantation for lymphoid malignancies: clinical and economic outcomes from the Nationwide Inpatient Sample*. Cancer, 2008. **112**(5): p. 1096-105.
9. Nonzee, N.J., N.A. Dandade, U. Patel, et al., *Evaluating the supportive care costs of severe radiochemotherapy-induced mucositis and pharyngitis : results from a Northwestern University Costs of Cancer Program pilot study with head and neck and nonsmall cell lung cancer patients who received care at a county hospital, a Veterans Administration hospital, or a comprehensive cancer care center*. Cancer, 2008. **113**(6): p. 1446-52.
10. Vanhoecke, B., T. De Ryck, A. Stringer, et al., *Microbiota and their role in the pathogenesis of oral mucositis*. Oral Dis, 2015. **21**(1): p. 17-30.
11. Marsh, P.D., D.A. Head, and D.A. Devine, *Ecological approaches to oral biofilms: control without killing*. Caries Res, 2015. **49** Suppl 1: p. 46-54.
12. Barasch, A. and D.E. Peterson, *Risk factors for ulcerative oral mucositis in cancer patients: unanswered questions*. Oral Oncol, 2003. **39**(2): p. 91-100.
13. National Institutes of Health Consensus Development Panel, *Consensus statement: oral complications of cancer therapies*. NCI Monogr, 1990(9): p. 3-8.
14. Al-Dasooqi, N., S.T. Sonis, J.M. Bowen, et al., *Emerging evidence on the pathobiology of mucositis*. Support Care Cancer, 2013. **21**(7): p. 2075-83.
15. Avritscher, E.B., C.D. Cooksley, and L.S. Elting, *Scope and epidemiology of cancer therapy-induced oral and gastrointestinal mucositis*. Semin Oncol Nurs, 2004. **20**(1): p. 3-10.

16. Leitlinienprogramm Onkologie (Deutsche Krebsgesellschaft, D.K., AWMF), , *Supportive Therapie bei onkologischen PatientInnen – Langversion 1.1*, 2017, AWMF Registernummer: 032/054OL, <http://leitlinienprogramm-onkologie.de/Supportive-Therapie.95.0.html> (Zugriff am 30.09.2019). 2017.
17. Napenas, J.J., M.T. Brennan, F.K. Bahrani-Mougeot, et al., *Relationship between mucositis and changes in oral microflora during cancer chemotherapy*. Oral Surg Oral Med Oral Pathol Oral Radiol Endod, 2007. **103**(1): p. 48-59.
18. Laheij, A.M. and J.J. de Soet, *Can the oral microflora affect oral ulcerative mucositis?* Curr Opin Support Palliat Care, 2014. **8**(2): p. 180-7.
19. Lalla, R.V., J. Bowen, A. Barasch, et al., *MASCC/ISOO clinical practice guidelines for the management of mucositis secondary to cancer therapy*. Cancer, 2014. **120**(10): p. 1453-1461.
20. Hong, C.H.L., L.A. Gueiros, J.S. Fulton, et al., *Systematic review of basic oral care for the management of oral mucositis in cancer patients and clinical practice guidelines*. Support Care Cancer, 2019. **27**(10): p. 3949-3967.
21. Ariyawardana, A., K.K.F. Cheng, A. Kandwal, et al., *Systematic review of anti-inflammatory agents for the management of oral mucositis in cancer patients and clinical practice guidelines*. Support Care Cancer, 2019. **27**(10): p. 3985-3995.
22. Yarom, N., A. Hovan, P. Bossi, et al., *Systematic review of natural and miscellaneous agents for the management of oral mucositis in cancer patients and clinical practice guidelines-part 1: vitamins, minerals, and nutritional supplements*. Support Care Cancer, 2019. **27**(10): p. 3997-4010.
23. Rubenstein, E.B., D.E. Peterson, M. Schubert, et al., *Clinical practice guidelines for the prevention and treatment of cancer therapy-induced oral and gastrointestinal mucositis*. Cancer: Interdisciplinary International Journal of the American Cancer Society, 2004. **100**(S9): p. 2026-2046.
24. Worthington, H.V., J.E. Clarkson, G. Bryan, et al., *Interventions for preventing oral mucositis for patients with cancer receiving treatment*. Cochrane Database of Systematic Reviews, 2011(4).
25. Keefe, D.M., M.M. Schubert, L.S. Elting, et al., *Updated clinical practice guidelines for the prevention and treatment of mucositis*. Cancer: Interdisciplinary International Journal of the American Cancer Society, 2007. **109**(5): p. 820-831.
26. McGuire, D.B., J.S. Fulton, J. Park, et al., *Systematic review of basic oral care for the management of oral mucositis in cancer patients*. Supportive Care in Cancer, 2013. **21**(11): p. 3165-3177.
27. Stringer, A.M. and R.M. Logan, *The role of oral flora in the development of chemotherapy-induced oral mucositis*. J Oral Pathol Med, 2015. **44**(2): p. 81-7.
28. Vasconcelos, R.M., N. Sanfilippo, B.J. Paster, et al., *Host-Microbiome Cross-talk in Oral Mucositis*. J Dent Res, 2016. **95**(7): p. 725-33.
29. Laheij, A.M., J.J. de Soet, P.A. von dem Borne, et al., *Oral bacteria and yeasts in relationship to oral ulcerations in hematopoietic stem cell transplant recipients*. Support Care Cancer, 2012. **20**(12): p. 3231-40.
30. Furquim, C.P., G.M. Soares, L.L. Ribeiro, et al., *The Salivary Microbiome and Oral Cancer Risk: a Pilot Study in Fanconi Anemia*. J Dent Res, 2017. **96**(3): p. 292-299.
31. Montassier, E., T. Gastinne, P. Vangay, et al., *Chemotherapy-driven dysbiosis in the intestinal microbiome*. Aliment Pharmacol Ther, 2015. **42**(5): p. 515-28.
32. Montassier, E., G.A. Al-Ghalith, T. Ward, et al., *Pretreatment gut microbiome predicts chemotherapy-related bloodstream infection*. Genome Med, 2016. **8**(1): p. 49.
33. Dewhirst, F.E., T. Chen, J. Izard, et al., *The human oral microbiome*. J Bacteriol, 2010. **192**(19): p. 5002-17.
34. Gevers, D., S. Kugathasan, L.A. Denson, et al., *The treatment-naive microbiome in new-onset Crohn's disease*. Cell Host Microbe, 2014. **15**(3): p. 382-392.
35. Atarashi, K., W. Suda, C. Luo, et al., *Ectopic colonization of oral bacteria in the intestine drives TH1 cell induction and inflammation*. Science, 2017. **358**(6361): p. 359-365.

36. Lozupone, C.A., M. Li, T.B. Campbell, et al., *Alterations in the gut microbiota associated with HIV-1 infection*. Cell Host Microbe, 2013. **14**(3): p. 329-39.
37. Vujkovic-Cvijin, I., R.M. Dunham, S. Iwai, et al., *Dysbiosis of the gut microbiota is associated with HIV disease progression and tryptophan catabolism*. Sci Transl Med, 2013. **5**(193): p. 193ra91.
38. Qin, N., F. Yang, A. Li, et al., *Alterations of the human gut microbiome in liver cirrhosis*. Nature, 2014. **513**(7516): p. 59-64.
39. Chen, Y., F. Ji, J. Guo, et al., *Dysbiosis of small intestinal microbiota in liver cirrhosis and its association with etiology*. Sci Rep, 2016. **6**: p. 34055.
40. Sears, C.L. and W.S. Garrett, *Microbes, microbiota, and colon cancer*. Cell Host Microbe, 2014. **15**(3): p. 317-28.
41. Arimatsu, K., H. Yamada, H. Miyazawa, et al., *Oral pathobiont induces systemic inflammation and metabolic changes associated with alteration of gut microbiota*. Sci Rep, 2014. **4**: p. 4828.
42. Nakajima, M., K. Arimatsu, T. Kato, et al., *Oral Administration of P. gingivalis Induces Dysbiosis of Gut Microbiota and Impaired Barrier Function Leading to Dissemination of Enterobacteria to the Liver*. PLoS One, 2015. **10**(7): p. e0134234.