PHILIPS

Presence of Fusobacterium nucleatum at colorectal cancer sites - Influencing factors and screening

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Recent studies suggest an association of periodontitis with an overall increased cancer risk but also with cancer development in specific anatomic regions, such as in the colon. The gut microbiome in general and specifically Fusobacterium nucleatum have been described to likely affect colorectal cancer (CRC) development. The microbiota of colorectal adenomas and of CRC sites presented a higher frequency and/or numbers of F. nucleatum, in comparison to healthy colon tissue. Further, reduced overall survival time has been reported for CRC patients with biopsies containing high levels of F. nucleatum compared to patients with low levels of the bacterium in their biopsies. But not all CRC tissue samples harbor F. nucleatum; however, possible reasons for this variation have not been addressed so far. One main reason could be the oral cavity, which appears as a reasonable source for dissemination of F. nucleatum to the colon. Thus, the present project intends to evaluate the possible contribution of the oral cavity as a reservoir for dissemination of F. nucleatum to the colon. Additionally, the gut microbiome and dietary intake will be assessed as possible factors influencing colonization of CRC sites with F. nucleatum and an association of F. nucleatum colonization in the colon with parameters in the saliva and serum will be tested.