Use of probiotics as new therapeutic agents for the management of periodontal disease.

Simone Gallo[1], Andrea Scribante[2]
University of Pavia

Gingivitis is a reversible inflammatory condition of the soft tissues surrounding the tooth, which may evolve towards to a destructive form called “periodontitis”. The main etiological factor for gingivitis is represented by plaque accumulation.
The first line of periodontal therapy consists of the mechanical removal of accumulated plaque/calculus through scaling, root planning, and polishing, along with specific oral hygiene instructions for the domiciliary maintenance of oral health. Moreover, chemical antimicrobial substances can also support these standard mechanical procedures by decreasing the bacterial load. Hydrogen peroxide, triclosan, and, above all, chlorhexidine, are the substances more commonly used for this purpose. However, side effects like tooth discoloration, oral mucosal erosion, and taste alteration can occur, especially with the use of this last one.
Many efforts are being done to develop new alternatives for the antimicrobial treatment of periodontitis and the latest trend is represented by probiotics. According to the Food and Agriculture Organization (FAO) and the World Health Organization (WHO), probiotics are “live microorganisms which when administered in adequate amounts confer a health benefit on the host” (WHO). Lactobacillus and Bifidobacterium are the strains most used to promote gastrointestinal health. In recent years, it has been suggested that probiotics could also positively affect the status of the oral health, contrasting bacteria responsible for caries, periodontal disease, and halitosis.
Different mechanisms have been proposed to explain the beneficial action of probiotic organisms, e.g., the exclusion and competition with pathogens for nutrients and epithelial cell adhesion, the production of antimicrobial substances against pathogenetic bacteria, an immunomodulatory action, and an enhancement of the mucosal barrier function.
Different studies have been conducted to assess the effect of probiotics on oral health, however future research should be performed to fully understand the potentiality of probiotics-based products for the management of different forms of periodontal disease.

Biography

Andrea Scribante – Research Resident – Unit of Orthodontics and Pediatric Dentistry, Section of Dentistry, Department of Clinical, Surgical, Diagnostic and Pediatric Sciences, University of Pavia, 27100 Pavia
Simone Gallo – PhD Student - Unit of Orthodontics and Pediatric Dentistry, Section of Dentistry, Department of Clinical, Surgical, Diagnostic and Pediatric Sciences, University of Pavia, 27100 Pavia

andrea.scribante@unipv.it
simone.gallo02@universitadipavia.it