Evaluation of bacterial flora composition on teeth and periodontal tissues in patients in treatment with rapid palatal expander.

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Abstract
Patients in treatment with rapid palatal expander (RPE) require professional assistance and more meticulous instructions on oral hygiene, since this appliance predisposes to gingivitis and caries. The aim of this work is to analyse the variability of the oral microbial flora found in patients in treatment with RPE with occlusal acrylic splint. It was also investigated whether the association of an antimicrobial mouthwash was useful during orthodontic treatment or whether regular and specific home oral hygiene manoeuvres were sufficient to maintain a good plaque control. The last goal was to highlight which of the different mouthwashes was the most effective in reducing the bacterial load. The patients were divided into 3 test groups and each one of them had a different mouthwash (chlorhexidine and sodium fluoride, fluorine, essential oils) randomly assigned. There was also a control group. Plaque samples were analysed through cultural analysis and PCR from T0 to T4 (8 months). Chlorhexidine mouthwash reduces the bacterial count by 96.08%, the fluorine by 94.50% and the essential oils by 95.74%. The results of the three mouthwashes are superimposable and although chlorhexidine gives the highest rate of bacteria reduction, its side effects lead the authors to prefer the essential oils.