1685 Secondary White-Spots Lesions in Fluorine Composite Marginal Adaptation. G. GALVANI, S. CHERSONI*, M. ZANARINI, R. RONCONI ORTOLMI, L. MONTESIRGIL, C. PRATI. School of Dentistry and Dept. Environmental Sciences, University of Bologna, ITALY.

Introduction: The development of secondary caries around composite margin has not been completely documented. It is still unclear which factors are responsible for the formation of secondary demineralization (defects occurrence: white-spots). Purpose: To assess white-spots in freshly placed restoration and in restored teeth.

Methods: Ten 12-year-old subjects were involved in the study. Twenty-four composite margins were examined: 6 were restored with different composite materials and exposed to a micro-leakage challenge, while the other 18 were restored with different composite materials and exposed to a micro-leakage challenge in addition to daily fluoride mouthwash intake. The results were assessed by visual inspection of the incidence and degree of demineralization. Results: No significant difference was found between the groups. Conclusion: Fluoride mouthwash appears to have a preventive role in the prevention of secondary demineralization.


A dental plaque is a very important factor as a cause of the decayed tooth. However, fluoride (F-) in dental plaque is considered to be one of the factors that affect the quality of the tooth. It is not clear what the concentration of the dental plaque on the teeth, and its influence on the demineralization in the marginal area increases with age as dental plaque sticks to the marginal area easily. The aim of this present study was to determine the effect of mouth rinsing on the enamel F- concentration and distribution in the supra-adjacent plaque biolmms compared with normal dental plaque surfaces. In situ two devices containing human enamel were fitted to the upper molar of 6 consenting volunteers. After 7d, one device was removed. The other device was removed after mouth rinsed by distilled water. These devices were immediately frozen in liquid N2, freeze-dried, embedded in methylmethacrylate and serially sectioned. F- conc. in the sections were determined using an ion-selective electrode following dissolution of the plastic using chloroform, extraction in perchloric acid and the addition of acetic buffer. F- conc. in normal plaque biolmms tended to be higher at the plaque-saliva interface, decreasing towards the enamel surface. F- conc. in mouth rinsed plaque looks lower than normal plaque. However, there is no significant difference of F- between normal plaque and mouth rinsed plaque. We suggest that fluoride accumulate in the plaque biofilm.