Perbandingan hasil pengukuran intrusi flour pada permukaan email dengan metoda flouresensi dan dengan metoda analisis mikro EDX

Abstrak

Flouride intrusion into enamel surface is one of the important factors of success in topical flouridation. Objective: to compare EDX and flourescence measurement methods of flouride intrusion into enamel surface after anchovy application. Methods: 5 extracted impacted third molars were immersed in sterile saline solution for 24 hours. The buccal surfaces of the teeth were painted with nail varnish, and a window of 5 mm2 at the center of each surface was left unpainted. Dried anchovies from the market were heated and powdered, and 5 g of this anchovy powder was diluted in 100 ml deionized distilled water to prepare an anchovy solution. The teeth were immersed in the anchovy solution for 5 min twice a day with 3 hours intervals. Immersions were repeated for 9 days. After immersion, the teeth were cut transversally through the window. The occlusal portions of the specimens were prepared for microscopic slides at ± 40um thickness. The cervical portions of the teeth were used as EDX specimens. Olympus BX41TF Fluorescence microscope was used to measure flourescence bandwidth. LEO scanning electron microscope with micro analyzer was used to measure flouride intrusion. Increment steps of 5um from outer edge of the enamel to inner side were used as the points of EDX analysis. Paired t-test was used to analyze the intrusion results. Results: Flouride intrusion depth measured using the flourescence method was 11.49 ± 0.71 um, while from the results of EDX analysis the average depth of flouride intrusion was 20.24 ± 0.57 um. Statistical analysis showed significant difference between the two methods. Conclusion: Intrusion measurement using EDX analysis gives higher flouride intrusion than the flourescence method.