

ABSTRACT

BACKGROUND & OBJECTIVES

Dental caries, etiologically is a multifactorial disease because of both bacterial acid production along with the buffering action from saliva and the surrounding surface of the tooth structure earlier visible as White Spot Lesions (WSLs).

Remineralization is the process whereby calcium ions and phosphate ions are supplied from an external source to the tooth to promote ion deposition into crystal voids. This study was done among various remineralizing agents containing different levels of calcium-phosphorous and fluoride delivery systems on incipient carious lesions and then analysed using Scanning Electron Microscope, Surface Micro Hardness analysis and Surface Roughness Analysis.

The objective is to compare and evaluate the remineralizing efficacy of various calcium-phosphate and fluoride delivery vehicles on artificial caries using Scanning Electron Microscope, Surface Micro Hardness analysis and Surface Roughness Analysis.

METHODS

Ninety two extracted human mandibular molars were and acid resistant varnish was then applied around the exposed enamel surface after leaving four equal windows and then immersed in demineralizing solution followed by remineralization under Artificial saliva, Remin Pro, Tooth Mousse Plus and Enafix for duration of 4 week.

RESULTS

All the specimens on evaluation in SEM showed evidence of thickening of their inter-rod substance early by 4 week of remineralization and marked evidence of remineralization was evident in Tooth Mousse Plus. In final acid exposure, Enafix showed more resistance to dissolution. Surface Micro Hardness (SMH) and the Surface Roughness (R_a) also exhibited similar results with marked reduction in roughness values and increased microhardness values with Tooth Mousse Plus exhibiting greater source of remineralization and Enafix showing more resistance to final acid challenge.

INTERPRETATION & CONCLUSION

Tooth Mousse Plus has shown better remineralization properties while Enafix has shown better resistance to final acid challenge.

KEYWORDS

SMH – Surface Micro Hardness; R_a – Surface Roughness; SEM – Scanning Electron Microscope;
