ABSTRACT AND KEYWORD

DISSERTATION TITLE:

Assessment of treatment of post- orthodontic white spot lesion with microabrasion and laser using spectrophotometer: An invitro study

ABSTRACT:

Aims and Objective: To compare the colour masking effect of microabrasion (orthophosphoric acid with pumice) and laser (Er: YAG) on post orthodontic white spot lesion using spectrophotometer and to compare resistance of microabrasion and laser treated enamel surface of white spot lesion to discolouration (tea and coffee solution) using spectrophotometer. **Materials and Methods:** The samples consist of 90 extracted premolars bonded with premolar brackets. A spectrophotometer baseline reading T0 (L*, a* & b*) was recorded. These samples were subjected to modified pH cycle model to form white spot lesion and pretreated white spot lesion reading T1 was recorded. The samples were divided into three groups of 30 each, they were group1 – control group, group 2 – microabrasion treated group and group 3- laser treated group. The control group 1 was untreated, group 2 was treated with microabrasion and group 3 was treated with Er:YAG laser. The post treated microabrasion and laser reading T2 was recorded. The colour T3 was assessed after storage in artificial saliva of 30 days. The samples were subjected to discolouration and T4 was recorded. The colour differences between various treatments were calculated as ΔE. The data were analyzed using unpaired T test and ANOVA. **Conclusion:** Microabrasion and laser treatment was effective in treating post-orthodontic white spot lesion and when stored in artificial saliva both showed colour improvement indicative of remineralization. Laser treated WSL, when subjected to discolouration showed resistance to stains than those treated with microabrasion.

Keywords: Post orthodontic white spot lesion, Microabrasion, Er:YAG laser, Spectrophotometer