EFFECT OF FLUORIDE RELEASE BY BONDING AGENT AND VARNISH IN PREVENTION OF ENAMEL DECALCIFICATION DURING ORTHODONTIC TREATMENT – A COMPARITIVE STUDY

**Background:** Individuals who got long term orthodontic treatment with fixed appliances are at increased risk for white spot formation on the labial surface of banded and bonded teeth if healthy oral care regimen is not followed. White spot lesions are essentially areas of porous surface enamel induced by carious demineralization and are milky white opaque spots on the smooth surface of the tooth. These lesions are more common with fixed appliances because of increase in retention areas for plaque accumulation.

**Aim:** The aim of this in vivo study is to compare the effect of fluoride release by bonding agent and varnish in prevention of enamel decalcification during orthodontic treatment. (GC Fuji Ortho LC and MI Varnish)

**Materials and Methods:** Each patient is randomly allocated into two groups. It is a blinded study. 10 patients in each group are allotted. Six maxillary anterior teeth are selected for assessment of decalcification and total of 60 teeth were engaged in the study in each group. Totally 120 teeth are evaluated for white spot lesions. One group received MI Varnish after bonding with non fluoride releasing bonding agent and other group received GC Fuji Ortho LC. Photographs are taken at the end of 10 months to observe the area surrounding the brackets for white spot lesion formation. The slides prepared for each group were evaluated by five observers. These observers are well qualified orthodontists who evaluate the amount of decalcification based on enamel decalcification index.
**Results:** Mann Whitney shows the amount of decalcification in mesial, distal, gingival side is more in group I than in group II. The amount of decalcification in occlusal side is more in group II than in group I. (p=0.05)

**Conclusion:** The significant reduction in development of lesion is much reduced with GC Fuji Ortho LC group than MI Varnish group. Fluoride release from bonding adhesive (GC Fuji Ortho LC group) gives better result than varnish with non fluoride adhesive (MI Varnish group). It is easy to use fluoride releasing adhesive over fluoride releasing varnish and reducing the clinician’s compliance.

Key words:

White spot lesion, MI Varnish, GC Fuji Ortho LC, Mann Whitney test