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**Comparison of the Tensile Bond Strength of two Commercially Available Heat Cure Silicone Soft Liners with Denture Base Resin after Various Surface Treatments of Denture Base Resin**

<sup>1</sup>Dr Isra Nazir, <sup>2</sup>Dr C S Shruthi, <sup>3</sup>Dr Anand, <sup>4</sup>Dr krishnapriya,  
<sup>5</sup>Dr Anamika Dhungel, <sup>6</sup>Dr Darakshan Nazir

1. Post graduate student, Department of Prosthodontics, crown and bridge, M R Ambedkar Dental College and Hospital, Bengaluru Karnataka.
2. Reader, Department of Prosthodontics, crown and bridge, M R Ambedkar Dental College and Hospital, Bengaluru Karnataka.
3. Post graduate student, Department of Prosthodontics, crown and bridge, M R Ambedkar Dental College and Hospital, Bengaluru Karnataka
4. Post graduate student, Department of Prosthodontics, crown and bridge, M R Ambedkar Dental College and Hospital, Bengaluru Karnataka
5. Post graduate student, Department of Prosthodontics, crown and bridge, M R Ambedkar Dental College and Hospital, Bengaluru Karnataka
6. Post graduate student, Department of Prosthodontics, crown and bridge, M R Ambedkar Dental College and Hospital, Bengaluru Karnataka

**Email Id:** [serviceheb@gmail.com](mailto:serviceheb@gmail.com)

**ABSTRACT**

**Aim:** To compare the tensile bond strength of two commercially available heat cure silicone soft liners with denture base resin after various surface treatments of denture base resin.


**Method:** Heat polymerised denture base resin and two heat cure silicone liners ( Molloplast-B and Permaliner) were used. A total of 160 heat cure acrylic blocks were made and then divided into 5 groups each with 32 acrylic blocks. Group 1specimens served as control. Group 2, Group 3 and Group 4 specimens were subjected to sandblasting with Al<sub>2</sub>O<sub>3</sub> particles, laser irradiation using Er:YAG laser and acid etching with 37% phosphoric acid respectively. Group 5- specimens were immersed in saliva after placing liner between blocks. Each surface treated group was divided into two subgroups, one lined with Molloplast-B soft liner and the other with Permaliner. Then all the specimens were subjected to tensile stress using UTM.

**Results:** There was a significant increase in the TBS of both silicone liners with denture base resin after pre-treatment of denture base with acid etching and laser irradiation. There was significant decrease in TBS after sandblasting and saliva immersion. There was no statistically significant difference in the TBS between Molloplast-B and Permaliner with denture base resin after acid

etching, laser irradiation and sandblasting. Molloplast-B had significantly more TBS after immersion in saliva.

**Conclusion:** The pretreatment of the denture base resin with acid etching using 37% phosphoric acid and laser irradiation using Er-YAG laser enhances the TBS between resilient liner and PMMA resin. Sandblasting using 50  $\mu\text{m}$  Al<sub>2</sub>O<sub>3</sub> particles and saliva immersion decreases the TBS between resilient liner and PMMA resin. The TBS of Molloplast-B is more than Permaliner in the presence of saliva.

**Keywords:** Tensile bond strength, Silicone soft liners, Molloplast -B

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