Abstract: Introduction: Self-etching primers may not make a good etching pattern on the dentin and enamel. This study evaluates the effect of double coating of one-step and two-step self-etching primers on enamel and dentin micro leakage.

Material and methods: Class 5 box-shape cavities were prepared in 40 intact premolar teeth, occlusal margins in enamel and gingival margins in dentin/cementum. Each group containing 10 teeth, we used bonding agents (one-step and two-step primers with applying one and two layers) before applying composite agent. Two self-etch primers, Clearfil-SE-Bond and Clearfil-S3-Bond, were applied. All the cavities were restored using Z100 composite. The teeth were thermocycled and were kept in distilled water for 24 hours in room temperature. The specimens were coated with nail varnish and were kept in 2 percent fuchsine for 24 hours. They were sectioned longitudinally with a diamond disc. Leakage was measured and ranked after observing them under stereo-microscope. The results were analyzed using Kruskal-Wallis and Mann-Whitney tests.

Results: There were no significant differences in microleakage values of two self-etch primers in one or two coats on both enamel and dentin (P-value > 0.05). The mean of microleakage values of specimens treated with self-etch primers, two-step Clearfil SE Bond was significantly lesser than the one treated with self-etch adhesive, one-step Clearfil S3 Bond both in enamel and dentin.

Conclusion: At the end of this assessment, we can say that even use of one layer of these primers on the enamel and dentin have the same acceptable results.