

# Push out bond strength of glass ionomer impregnated gutta percha/Glass Ionomer sealer system to root canal dentin conditioned with different endodontic irrigants



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### Biography

Elsheikh A has completed his PhD at the age of 34 years from Calionia University, USA. His work is limited to Endodontics and Dental Business Administration.



### Abstract

The present study evaluated the push out bond strength of Active GP system versus Guttapercha/AH Plus sealer using different irrigants. Fifty six human single rooted teeth were instrumented with a crown-down technique using Endosequence rotary Ni-Ti file system. The teeth were equally divided into two main groups and eight subgroups according to final irrigant: NaOCl, EDTA, Citric acid, and MTAD. Obturation was done by single cone technique in Active GP system, and with lateral compaction in GP/AH Plus group. Each obturated tooth was embedded in Epoxy cylinder, where three sections of 2 mm were done using the Isomet saw. The push out bond strength was done using universal testing machine working at a speed of 0.5 mm/ min. Data were analyzed using one way analysis of variance followed by Newman-Keulsposthoc test. Stereomicroscopic examination determined the type of bond failure. Results showed that in Active GP group, NaOCl dentin-treated subgroup had the highest bond strength mean value ( $6.98 \pm 1.9\text{MPa}$ ) followed by citric acid subgroup ( $5.40 \pm 1.1\text{MPa}$ ), then MTAD subgroup ( $4.71 \pm 0.7\text{MPa}$ ), while EDTA subgroup recorded the lowest value ( $4.14 \pm 1.4\text{MPa}$ ), however they were statistically nonsignificant ( $P > 0.05$ ). In the GP/AH Plus group, EDTA dentin-treated subgroup showed statistically significant higher mean bond strength ( $5.9 \pm 0.7\text{MPa}$ ) followed by NaOCl subgroup ( $5.40 \pm 1.1\text{MPa}$ ), then citric acid subgroup ( $4.6 \pm 0.6\text{MPa}$ ), while MTAD subgroup recorded the lowest value ( $3.5 \pm 0.1\text{MPa}$ ). Failure in Active GP group was mainly cohesive in the Gutta-percha, while GP/AH Plus group showed mainly adhesive failure of AH Plus sealer with the gutta-percha.

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