

## Response to the Letter to the Editor: “Effect of Polydopamine on Bonding Characteristics of Mineral Trioxide Aggregate to Resin Composite”

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### Dear Editor,

We sincerely thank the authors for their interest in our paper titled, ‘Effect of Polydopamine on Bonding Characteristics of Mineral Trioxide Aggregate to Resin Composite’ published in European Endodontic Journal (1). We would like to share our response to the ‘Letter to the Editor’.

The author has stated that this is different from the research carried out by Zhong et al. (2) entitled “Modifying polydopamine resin containing nZVI composite to remove hexavalent chromium from aqueous solutions”. Yes, we agree with the author that our research is different from the research carried out by Zhong et al. (2). The composite used in our research is a nanohybrid resin composite with methacrylate functional groups, used for restorative purpose in patients in dentistry. This resin is different from the D201 resin with quaternary ammonium functional groups used in management of waste water, as experimented by Zhong et al. (2).

The authors have stated that it would be interesting to see if the effect of PDA pretreatment is consistent across different brands and formulations of the materials used in the study. This is already mentioned as a limitation in our article in the following lines, ‘With a variety of bonding agents available commercially, further studies should assess the effect of other bonding strategies and bonding agents in this experimental set up’ (1). While the basic composition of MTA across various commercial brands remains the same, minor distributional differences in elemental composition exist (3). Hence, it will be interesting to see the effect

of this novel approach on varying commercial brands of MTA in future studies.

The authors have stated that storing the MTA/RC assemblies in 100% relative humidity might not accurately reflect the situation in actual clinical setting. In a clinical setting, a moist cotton pellet is placed over MTA to enable its setting prior to placement of a permanent restoration. Hence, in our study, the MTA/RC assemblies were stored in 100% relative humidity to closely simulate the clinical setting. This methodology is also widely adopted in previously published research by Neelakantan et al. (4) and Tu et al. (5).

The authors have stated that It would be more relevant to test the shear bond strength (SBS) after it had been stored for longer periods of time in artificial saliva or other simulated oral fluids and the samples should be subjected to thermocycling or mechanical loading so that the durability of the bond can be evaluated. Our study was done as short-term research to evaluate the effects of MTA on resin composite bonding. We have clearly mentioned this as a limitation of our study in the discussion section in the following lines, ‘Long term bond strength of resin composite to MTA also needs to be assessed’ (1). Future studies should also evaluate the effect of thermocycling in this experimental set up.

The authors have stated that failure mode analysis of the samples that showed cohesive failure in MTA had not been reported. This data is included in our article (1) in Table 3 as well as in Figure 5 (panel a) (1). We sincerely thank the authors for their valuable inputs.

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