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Evaluation of antibiofilm activity and smear layer removal efficacy of a novelendodontic irrigant

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Aim of this *In vitro* study was to evaluateantibiofilm activity and smear layer removal efficacyof a novel endodontic irrigant (NEI). Root canals of fifty single rooted teeth were enlarged with protaper files to size F3. Irrigation was performed with 2.5% NaOCl and 17% EDTA for one minute.All the samples were then coated with nail varnish and sterilized. 5µl of *E. faecalis* inoculum was placed in the root canals and incubated at 35^0C for 3 weeks.All the samples were then divided into four groups (n=10). Group 1→ 5ml of 2.5% NaOCl for 5 min; Group 2→ 5 ml of 2% chlorhexidinegluconate (CHX) for 5 min; Group 3→ 25µl of NEIfor 5 min; Group 4→ 5ml of distilled water for 5 min. The samples were then longitudinally split and dentin shavings was collected and colony forming units was determined. For smear layer assessment, 30 single rooted teeth were instrumented as mentioned above. After each instrument change, 5 ml of 2.5% NaOClwas used for irrigation. All samples were then divided into 3 groups: Group 1→ 17% EDTA; Group 2→NEI; Group 3→ saline. 5ml of all the irrigantswas used for 1 min. All the specimens were then subjected to SEM analysis. Results demonstrated that, there was no significant difference between CHX, NaOCl and NEI related to their antimicrobial effect. When smear layer removal efficacy was evaluated, there was no difference between 17% EDTA and NEI in coronal and middle third. However, in apical third 17% EDTA was better.

Biography

N Vasudev Ballal completed his graduation from SDM College of Dental Sciences, Dharwad, India. Then, I completed my MDS and PhD in Endodontics from the renowned Manipal College of Dental Sciences, Manipal University, Manipal, India. I have published more than 85 papers in reputed international and national journals. I have introduced "Maleic acid" as an irrigating agent into endodontics. I serve as the editorial board member of 8 reputed international journals and as a reviewer of more than 35 international journals. I have received several international awards to my credit. I have 155 citations with the H index of 7.

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