Rajeswari Gopal et al., Madridge J Dent Oral Surg. 2018
http://dx.doi.org/10.18689/2639-0434.a2.002

Anti-Bacterial Efficacy of Herbal Irrigants against *Enterococcus faecalis*

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Introduction: Infections play a key role in the development of periradicular diseases and also one of the reasons for the endodontic treatment failures. Mechanical preparation of the canal leads to disruption in the microbial configuration whereas canal irrigation with tissue-lytic and anti-microbicidal solutions results in a reduction in the microbial load. Herbal derivatives with anti-microbial properties are good alternatives for chemical irrigants as the former are free from toxic chemicals. This presentation highlights the efficacy of a herbal product as a canal irrigant to overcome the cytotoxicity of polypotent stem cells.

Aim: To determine the antimicrobial efficacy of herbal extracts as an intra-canal medicament against *Enterococcus faecalis*

Methods: The dried fruits of Piper nigrum L (long pepper), Piper longum L (black pepper), and Zingiber officinale Roscoe (ginger) were powdered and mixed separately with methylcellulose vehicle to get irrigant solution. An *in-vitro* study is carried out to evaluate the antibacterial efficacy of these organic irrigants against the *Enterococcus faecalis*, the most common organism in persistent infections. Real-time PCR technique is applied to assess the effectiveness by comparing with that of standard irrigants 2% chlorhexidine and saline. One way ANOVA with Tukey's Post-Hoc test was used to interpret the results.

Results:

1. The herbal extract of dried ginger revealed high antibacterial efficacy against E.Feacalis, followed by black pepper and long pepper.
2. The microbicidal activity of chlorhexidine is only marginally superior to the herbal products in reducing the bacterial load.
3. The threshold limit to reach the efficacy is preferred with the herbal derivatives than with synthetic antimicrobial agents

Conclusion:

The study results prove that the herbal irrigants bring the almost the near antibacterial efficiency of the chemical products. Hence to overcome the proven cytotoxic effects of the chemical irrigants, herbal substitutes should be formulated with acceptable standardization and drug control regulations.

Biography:

Dr. K. Rajeswari Gopal completed BDS education from the prestigious, Faculty of Dental sciences, Sri Ramachandra University and post Graduation in Conservative Dentistry and Endodontics from the same university. She started professional academic career in the same university and currently hold the post of Assistant Professor and also the treasurer for the Indian Association of Conservative Dentistry and Endodontics. She has won Best oral presentation in regional and National conferences and currently holds six publications in Indexed journals.