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Editorial

Is herbal elixir the way to go in endodontics?

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India, for long, has been a rich repository of green gold and texts like Rigveda, Yajurveda, Atharvaveda, CharakSamhita & SushurSamhita have been guiding and paving the path for therapeutic use of herbs and herbal derivatives since ages. Moreover, with the advent of herbs and their derivative in dentistry, we are turning a new leaf in our lives. From its inculcation in daily lives as a part of oral hygiene practices to the much newer ways of introduction into the clinical aspect of dentistry.¹

As in terms of the specialty of endodontics, for a successful endodontic therapy, elimination of pathogens from the root canal system is of utmost importance to retain an endodontically compromised infected tooth in its normal form and function in oral cavity with long term prognosis. Root canal treatment is a complex procedure involving thorough debridement of the root canal space during chemomechanical preparation followed by a three dimensional obturation to obtain an adequate hermetic seal. However, due to difficulty in instrumentation arising because of various complexities in root canal morphology, during chemomechanical instrumentation, use of various irrigants and medicaments has been advocated that aid in complete removal of organic and inorganic debris, and effectively eliminate micro-organisms and their by-products. With our dependency on the synthetic options available for this purpose, we have had our share of struggle with micro-organisms developing resistance to

these chemicals and synthetic drugs and undesirable tissue toxicity, while a few others lighten our wallets significantly. In this wave of our kind of green revolution, the herbal derivatives possessing antimicrobial, analgesic, anti-inflammatory and antioxidant properties are researched and have shown promising results.

These herbal products are natural and environmental-friendly. Considering the antimicrobial and antioxidant effect of various herbal extracts that have been researched about, most widely used are Neem and Miswak. Azadirachta Indica, known as Indian neem/margosa tree and Salavadora Persica (Miswak), parts of which have been used for centuries as oral hygiene tools in many parts of the world, particularly in India and Arabian world respectively, have shown to be highly efficient in reducing Enterococcus faecalis (micro-organism most commonly being found and thought to be the main cause for endodontic failures), suggesting its possible use as a natural substitute to sodium hypochlorite.^{2,3}

Moreover, literatures show that Triphala and green tea have exhibited both antibacterial property as well as chelation action.⁴ A study conducted with acacia extracts proved they possessed anti-bacterial activity against Streptococcus mutans and Enterococcus faecalis.⁵ Also, in another study conducted using extracts of liquorice, clove, cinnamon, babool showed that babool at a concentration of 50% had the highest activity against Enterococcus faecalis.⁶

Furthermore, herbal medicaments like Propolis, A. lappa, A. indica, C. sylvestris, Allium sativum, M. citrifolia,

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C. sinensis, Citrus limonum, Orange Oil, Salavadorapersica, *M. alternifolia*, Triphala, *C. longa* (Turmeric) to name a few have proven antimicrobial and antioxidant effect. Studies conducted to assess the antimicrobial activity of propolis with Ca(OH)₂ as intracanal medicament against *Enterococcus faecalis* found that propolis was effective in eliminating the microorganisms, although its use calls for caution because of the allergic reactions it showed in certain patients.⁷ An in-vitro study with *Arctium lappa* exhibited its antimicrobial potential against tested pathogens such as *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*, *Bacillus subtilis*, and *Candida albicans*.⁸ *Curcuma longa* (turmeric) has been shown to have anti-inflammatory, antioxidant and antimicrobial activities against a variety of pathogens opening new vistas for its use as intracanal medicaments.⁹ So, herbal extracts can be effectively used as root canal irrigant and medicaments for eradication of various micro-organisms during routine endodontic procedure.

We seek refuge in the nature in the hope of safety and security, but being in the field of science, no hopes can be blind. While more work on the efficacy and safety of herbal alternatives is needed, these herbal derivatives as irrigants and medicaments might just turn out to be the safer substitute we never knew we needed.

Conflict of Interest

None.

References

1. Taheri JB, Azimi S, Rafeian N, Zanjani HA. Herbs in dentistry. *Int Dent J*. 2011;61(6):287-96.
2. Bohora A, Hegde V, Kokate S. Comparison of the antibacterial efficiency of neem leaf extract and 2% sodium hypochlorite against *E. faecalis*, *C. albicans* and mixed culture-An in vitro study. *Endodontology*. 2010;22(1):8-12.
3. Shingare P, Chaugule V. Comparative evaluation of antimicrobial activity of miswak, propolis, sodium hypochlorite and saline as root canal irrigants by microbial culturing and quantification in chronically exposed primary teeth. *Gems*. 2011;1(1):12-21.
4. Prabhakar J, Senthilkumar M, Priya MS, Mahalakshmi K, Sehgal PK, Sukumaran VG, et al. Evaluation of antimicrobial efficacy of herbal alternatives (Triphala and green tea polyphenols), MTAD, and 5% sodium hypochlorite against *Enterococcus faecalis* biofilm formed on tooth substrate: an in vitro study. *J Endodontics*. 2010;36(1):83-6.
5. Khan R, Islam B, Akram M, Shakil S, Ahmad AA, Ali SM, et al. Antimicrobial activity of five herbal extracts against multi drug resistant (MDR) strains of bacteria and fungus of clinical origin. *Molecules*. 2009;14(2):586-97.
6. Kumar D, Sidhu P. The antimicrobial activity of *Azadirachta indica*, *Glycyrrhiza glabra*, *Cinnamomum zeylanicum*, *Syzygium aromaticum*, *Accacia nilotica* on *Streptococcus mutans* and *Enterococcus faecalis*-an in vitro study. *Endodontology*. 2011;23(1):16-23.
7. Parolia A, Thomas MS, Kundabala M, Mohan M. Propolis and its potential uses in oral health. *Int J Med Med Sci*. 2010;2(7):210-5.
8. Pereira JV, Bergamo DC, Pereira JO, França SD, Pietro RC, Silva-Sousa YT, et al. Antimicrobial activity of *Arctium lappa* constituents against microorganisms commonly found in endodontic infections. *Braz Dent J*. 2005;16(3):192-6. doi:10.1590/s0103-64402005000300004.
9. Neelakantan P, Subbarao C, Subbarao CV. Analysis of antibacterial activity of curcumin against *Enterococcus faecalis*. *Int J Curr Res Rev*. 2011;3(9):37-42.

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