

Comparison of the antimicrobial efficacy of sodium hypochlorite (NaOCl), neem leaf extract (*Azadirachta indica*) and noni (*Morinda citrifolia*) against *E. faecalis* and *C. albicans*-In vitro study

Introduction



Neem (*Azadirachta indica*) is one of the most versatile medicinal plant having a wide spectrum of antimicrobial activity. It is called as "reliever of sickness" and is regarded as the village dispensary of India.



Morinda citrifolia juice (MCJ) has a broad range of therapeutic effects, including antibacterial, antiviral, antifungal, antitumor, anti-inflammatory, and immune-enhancing effects. As an endodontic irrigant when compared to NaOCl it is equally effective in removing the smear layer. It is found to enhance the adherence of stem cells and is less toxic to the stem cells than NaOCl in regenerative procedures.

AIM OF THE STUDY

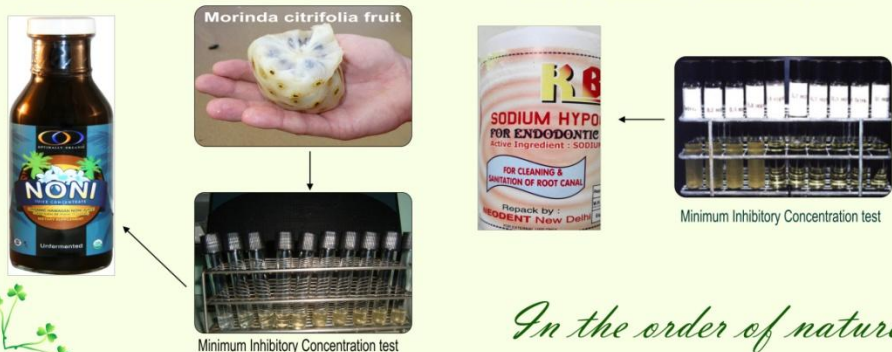
To compare the antimicrobial efficacy of sodium hypochlorite (3%), neem leaf extract (3%) and *Morinda citrifolia* (6%) against *E. faecalis* and *C. albicans* using the agar diffusion method.

MATERIAL & METHODS

Group 1- Alcoholic neem leaf extract (3%)



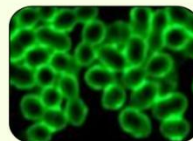
Group 2- *Morinda citrifolia* (6%)



Group 3- Sodium hypochlorite (3%)

AGAR Diffusion test

E. faecalis



C. albicans



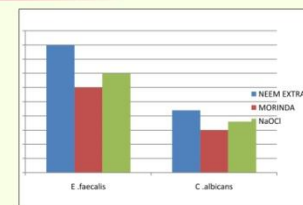
Micro organisms were streaked on petridish containing blood agar 3 wells of 6mm punched out and filled with 500µL of respective test solution and incubated for 37 C for 24 hours



Zones of inhibition were measured using standard protocols

Results

Test Irrigants	Zone of Inhibition (average in mm)	
	<i>E. Faecalis</i>	<i>C. albicans</i>
Neem Leaf extract	18mm	9mm
<i>Morinda citrifolia</i>	12.5mm	6mm
NaOCl	14mm	7.5mm



Conclusion

Antimicrobial efficacy- Neem leaf extract 3% > NaOCl 3% > Morinda 6%

Under the limitations of this study, in vitro observation of these herbal irrigants' effectiveness appears promising. Preclinical and clinical trials are needed to evaluate efficacy and safety before neem can conclusively be recommended as an intracanal irrigating solution.

In the order of nature we may behold the ways of the Eternal.