International Journal of Drug Development & Research | July-September 2011 | Vol. 3 | Issue 3 | ISSN 0975-9344 | Available online http://www.ijddr.in
Covered in Official Product of Elsevier, The Netherlands

Covered in Index Copernicus with IC Value 4.68 for 2010
Letter to Editor

Efficacy of Natural Products in Fixed Orthodontic Appliances (FOA) Treatment –A Dental Note

ARAVIND KUMAR.S* [1], **LAKSHMI.T**[2]
Reader, Department of Orthodontics, Saveetha Dental College, Chennai.
Senior Lecturer, Department of Pharmacology, Saveetha Dental College, Chennai.

*Corresponding author, Mailing address:

Dr. Aravind kumar.S
Reader,Department of Orthodontics,
Saveetha Dental College & Hospitals,Chennai.
Email Id: dr.aravind.s@gmail.com

How to Cite this Paper:
ARAVIND KUMAR.S , LAKSHMI.T, "Efficacy Of Natural Products In Fixed Orthodontic Appliances (FOA) Treatment –A Dental Note", Int. J. Drug Dev. & Res., July-Sep 2011, 3(3): 01-02

Article History:----------
Date of Submission: 15-09-2011
Date of Acceptance: 28-09-2011
Conflict of Interest: NIL
Source of Support: NONE

To The Editor

Oral bacteria are the primary etiologic agents that cause dental caries/plaque. Bacteria have evolved to survive in the environment of the tooth surface, gingival epithelium, and oral cavity. Acidogenic oral bacteria like *streptococcus mutans, streptococcus salivarius,Streptococcus mitis, Streptococcus sanguis* and *lactobacillus acidophilus* primarily causes dental caries/plaque that surround orthodontic appliances in many patients undergoing Orthodontic treatment [1]. Such bacteria can lead to tooth enamel breakdown and potential discoloration of the tooth surface, and these aesthetic changes can persist for many years after orthodontic treatment[2, 3]. Natural products derived from plant source are found to be highly efficient in eradicating the dental caries/plaque found in fixed orthodontic appliances patients undergoing orthodontic treatment.

We read a recent publication on the *invitro* antibacterial activity of *Acacia catechu* heartwood extract against oral microbes. the study revealed the potency of *A.catechu* extract in treatment of the dental caries/plaques caused mainly by *streptococcus mutans, streptococcus salivarius* and *lactobacillus acidophilus* [4],the finding is very interesting. Recently many herbal extracts were tested against the acidogenic oral bacteria and found to be effective in management of dental plaque, However the active

constituent responsible for the antibacterial activity should be identified by phytochemical analysis. Similar study was conducted on *Aesculus hippocastanum* against oral microbes that causes dental caries/plaque. the study suggest the *A.hippocastanum* ethanolic extract is effective in eradicating the dental plaque caused by cariogenic organism like *streptococcus mutans, streptococcus salivarius ,streptococcus mitis,streptococcus sanguis* and *Lactobacillus acidophillus*[5].

Vanka A *et al* also conducted a study on *Azadirachta indica* mouthwash against the salivary levels of *streptococcus mutans and Lactobacillus acidophillus*. He concluded that *Azadirachta indica* mouthwash as an effective agent in eliminating the dental caries/plaques with or without alcohol and chlorhexidine since antiquity[6] .

Beukes an orthodontist conducted an *invitro* study on the antimicrobial activity of phytomedicine against acidogenic oral bacteria on eight medicinal plants like *Hydrastis Canadensis, Cyclopia Intermedia, Hypericum perforatum, Ginkgoaceae, Passiflora incarnata, Achillea Millefolium, Arciosiaphylos uva-ursi* and *Artemisia absinthium* against *S. mutans, S. sobrinus, L. casei and A. naeslundii* involved in dental demineralisation., acetone, ethanolic, hexane form of extract were used.The control treatments were chlorhexidine and fluoride. His findings concludes that The herbs with activity that ranges of 0,04-0,3 mg/ml includes *Ginkgoaceae, Achillea Millefolium, Passiflora incarnata, Arciosiaphylos uva-ursi and Hypericum perforatum*. The acetone extracts showed significant inhibition zones against *S.mutans, L.casei and S.sobrinus* when compared to ethanolic and hexane extract.[7]

Hence with all the evidence based scientific studies we conclude that the herbal products like *Acacia catechu willd,Aesculus hippocastanum, Azadiractha Indica, Achillea millifolium, Passiflora incarnata, Arciosiaphylos uva-ursi,Hypericum perforatum* and *Ginkgoacea* were proved as an effective agents for the prevention of dental caries/plaques caused primarily by *streptococcus mutans, streptococcus sobrinus, Lactobacillus casei* and *Lactobacillus acidophilus*. Moreover, these herbal extracts can also be applied in the fixed orthodontic appliance patients undergoing orthodontic treatment to eradicate the dental plaques that usually seems to be difficult to get removed.

References:

1.Chang HS, Walsh LJ, Freer Tj The effect of orthodontic treatment on salivary flow, pH, buffer capacity, and levels of mutans streptococci and lactobacilli. Australian Orthodontic Journal 1999;15:229-234.

2.Diamanti-Kipioti A, Gusberti FA, Lang NP Clinical and microbiological effects of fixed orthodontic appliances. Journal of Clinical Periodontology 1987;14:326-333.

3.Atack NE, Sandy jr ,Addy M Periodontal and microbiological changes associated with the placement of orthodontic appliances. A review. Journal of Periodontology 1996;67:78-85.

4. Geetha R.V ,Anitha Roy ,**Lakshmi.T** "In vitro evaluation of Anti bacterial activity of heartwood extract of Acacia catechu on oral microbes".International journal of current research and review vol.3 issue 6 june 2011.

5. Anitha Roy,Geetha RV, **Lakshmi.T** .Invitro antibacterial activity of Aqueous and Ethanolic extract of Aesculus hippocastanum on oral microbes.Asian journal of pharmaceutical and clinical Research.Vol4 issue 4 Oct-Dec 2011(article in press)

6. Vanka A et al The effect of indigenous Neem Azadirachta indica mouth wash on Streptococcus mutans and lactobacilli growth. Indian J Dent Res. 2001 Jul-Sep;12(3):133-44.

7. Invitro Antimicrobial activity of phytomedicine against acidogenic oral bacteria available at http://iadr.confex.com/iadr/safdiv04/preliminaryprogram/abstract_52172.html