

Anti-inflammatory and analgesic activities of *Dashana Samskara Churna* and its paste form

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Anti-inflammatory and analgesic activities of *Dashana Samskara Churna* and its paste form were examined in different animal models. Anti-inflammatory activity was evaluated in acute, sub-acute and chronic inflammatory models and compared with Phenylbutazone, Diclofenac sodium and Dexamethasone standards, respectively. Analgesic activity was evaluated in formalin induced paw licking (chemically induced pain) and tail flick method (thermally induced pain) where Indomethacin and Pentazocine were used as standard drugs, respectively. Test formulation in the form of paste inhibited the carrageenan induced paw oedema ($P < 0.05$), formalin induced paw licking ($P < 0.01$) and increased the Tail Flick Latency ($P < 0.05$) in comparison to control rats. Test formulation in the form of *Churna* did not inhibit the paw oedema induced by phlogostic agents, however it exhibited significant analgesic activity by decreasing formalin induced paw licking response ($P < 0.05$). The results suggest that the paste form of *Dashana Samskara Churna* has significant analgesic and anti-inflammatory potential as reflected by the parameters investigated, while *Churna* form has only analgesic activity. Thus, it can be concluded that *Dashana Samskara Churna* in the form of paste will be the most appropriate modality in treatment of gingivitis.

Keywords: Analgesic, Anti-inflammatory, Carrageenan, *Dashana Samskara Churna*, Dental problems, Gingivitis.

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Introduction

Gingivitis which is known as *Shitada* in Ayurveda, is an inflammation of the marginal gingiva, which occurs widely in most populations affecting both children and adults. The high general prevalence of gingivitis is 50% and this may be due to deficient oral health care^{1,2}. Therapy to treat gingivitis is aimed primarily at reduction of etiologic factors to reduce or eliminate inflammation, thereby allowing gingival tissues to heal. Considerable research efforts have focused on systemic application of host modulating agents such as non-steroidal anti-inflammatory drugs^{3,4}.

Dashana Samskara Churna a polyherbal formulation is well known *Pratisarana* (A kind of local application) drug mentioned in different classical texts and also in Ayurvedic formulary of India as remedy for all types of dental problems including gingivitis⁵. This formulation contains drugs like *Shunti* (*Zingiber officinale* Rosc.), *Haritaki* (*Terminalia chebula* Retz.), *Musta* (*Cyperus rotundus* Linn.), *Khadira* (*Acacia catechu* Willd.), *Karpura*

(*Cinnamomum camphora* Nees.), *Puga* (*Areca catechu* Linn.), *Maricha* (*Piper nigrum* Linn.), *Lavanga* (*Syzygium aromaticum* Linn.), *Twak* (*Cinnamomum zeylanicum* Breyn.) and *Khatika* (Chalk powder)⁶. Almost all drugs of this formulation are reported to be having anti-inflammatory and antibacterial activities⁷⁻¹⁵ which is the prime therapeutic intervention in the treatment of gingivitis.

Considering some of inconveniences of this formulation like less palatability to patients especially children, complaining from patients due to inconvenient form, more chances of microbial contamination, short shelf-life, this formulation was converted in to paste form which is the most suitable and convenient for treatment in dental application. Thus, prepared *Dashana Samskara* paste (DSP) was subjected to comparative anti-inflammatory and analgesic activities with *Dashana Samskara Churna* (DSC).

Materials and Methods

Test drugs

The raw materials (Table 1) of the test formulation were collected from pharmacy attached to the institute and were subjected to pharmacognostical studies in

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