

A literature based study on *Fagonia cretica*: A Review

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ABSTRACT

Amongst unquantified remedies available in ayurvedic system of medicine *Fagonia cretica* is a species of herb belonging to *Zygophyllaceae* family. Exhaustive literature survey was performed to study the various aspects of the plant including medicinal specularities. Versatile medicinal activities have been reported by the researchers including cytotoxic & antitumor potential, effects on hematological & hormonal profile, hepatoprotective activity etc. *Fagonia* species are grown in deserts & dry parts of India; Pakistan & tropical Africa including USA. The major phytoconstituent of the considerable number of species are saponins and tannins flavonoids and cardiovascular glycosides.

Key Words: *Fagonia cretica*, Literature survey, Pharmacological activities.

INTRODUCTION

Ayurveda's main object is to assist the person with good health & to maintain it including sick person regaining adequate health. The exercise of Ayurvedic medication is intended to endorse human pleasure at spiritual, mental & physical level. With suitable equilibrium of all dynamic vitalities in the body, the procedures of physical decline & ailment can be reversed to good health. This is consummate by the suitable eating habits, thinking habits as well as living habits including the use of natural remedies to heal the various disease.

Amongst un-quantified remedies available in ayurvedic system of medicine *Fagonia cretica* is a species of herb belonging to *Zygophyllaceae* family. The plant is

grown in Spain, the Balearic Islands; Crete; Malta; Cyprus & North Africa & Morocco to Egypt. It is a creeping herb & having star-shape involving five small petals, coloring from violet to light violet flowers. Hence the study was aimed to review the potential of plant *Fagonia cretica* L.

Plant profile

Fagonia species are grown in deserts & dry parts of India; Pakistan & tropical Africa including USA. The whole plant is used for various therapeutic potentials. Introductory phytochemical evaluation on shoot - systems of *Fagonia arabica* L. var. *viscidissima*-Maire; *Fagonia-bruguieri* Dc. & *Fagonia-indica* Burm f var. showed many morphological variances in edible organs of the 3 species; such as length, color and

surface of the plant, stem, & leaves and leaflets -size. There were several morphological differences in, flowers, fruit & seeds from different species.

The plant in India, in the form of decoction of shade dried leaves and fresh squash from whole plant is beneficial in stomach troubles, fever as well as in the problems of skin commonly itching, & wounds. In different other countries the herb is implemented for hyper-acidity; gonorrhoea; skin problems; stomachic; tonic; expectorant; anti-inflammatory; fever; swellings; wounds & kidney problems. The plant is also supposed to be good for hepatic problems.

Pharmacological activities

Thrombolytic activity

Dhamasa (*Fagonia*) possesses thrombolytic activity, invitro model showed breakdown of blood components. However, *Fagonia arabica* species showed 75 % of blood clot lysis in, in -vivo animal models. *Fagonia arabica* species could be incorporated as a thrombolytic agent for the improvement of patients suffering for Atherothrombotic diseases.

Anti-oxidant activity

Antioxidant potential of *F. arabica* , *F. bruguieri*, and *F. indica*

was measured using invitro models such as DPPH ,ABTS•+ and ferric ion reducing power assays. Its effect on neuroprotection and energy metabolism was studied. The neuroprotective efficacy against ischemia/reperfusion mediated cell death was reported. Thus the three species of *Fagonia* plays important role as the prophylactic or therapeutic agent for the treatment of ischemic stroke. The antioxidant activity was also reported by electron spin resonance (ESR) spectroscopy.

Synergistic activity

Injection of *Fagonia arabica* plant and fish extract acts synergistically in the blood clotted mice, mice suffering from myocardial or cerebral infarction and embolized mice. Therefore, combinatory pharmacology showed the synergistic activity in tied mice for a long duration. The synergistic effect was compared with streptokinase as well as a non-thrombolytic agent (control).The percentage of clot lysis, w was 65.5% for plant extract, but streptokinase had 71%. The study was done in eleven healthy volunteers representing a mean value and SD of 65% \pm 2.01% and 71.67% \pm 0.71% of the plant extract and streptokinase respectively, when compared with non-thrombolytic (control), that is, 0.86% \pm 0.08%.

Analgesic activity

The analgesic activity of alcoholic extract of *Fagonia indica* was tested by the writhing and hot plate animal models, using acetyl salicylic acid (200mg kg⁻¹,i p.) and morphine

(10mg kg⁻¹,i.p.) as references drugs. The alcoholic extract of whole plant possesses analgesic action which is probably mediated via central and peripheral mechanism and does not seem to involve opioid receptors.

Anti-inflammatory activity

Carrageenan- induce rat paw edema model was used for anti-inflammatory study *F. schweinfurthii* and *F.indica* extract exhibited strong effect in acute inflammatory disorders. The plant contains polyphenolic compounds, saponins and flavonoid glycosides that could be responsible for the anti-inflammatory activity either alone or may be due to inhibition of inflammatory mediators in combination with other constituents. Ten and twenty percent ethanolic extract of *F. schweinfurthii* and *F.indica* reduced significantly the formation of edema induced by carrageenan and exhibited good anti-inflammatory effect comparable to those of Diclomax®.

Wound healing activity

The excision wound model was used to study the wound contraction action of *F. schweinfurthii* extract herbal formulations . The formulated gel of *F. schweinfurthii* extract fasten the wound healing process may be due to enhancing the cellular defense mechanisms, proliferation, suppression of inflammation and contraction of the collagen tissue and could be delayed by reactive oxygen species or microbial infection . The activity may be related to plant polyphenolic

compounds including saponins, flavonoids & glycosides.

Anti- microbial activity

Alcoholic extract subjected to in-vitro screening for antimicrobial activity by using agar diffusion technique for bacteria & fungi. The 10% ethanolic extract of *Fagonia indica* showed antimicrobial activity against *Salmonella typhi* & Alcoholic extract at dose of 200mg/ml¹ showed marked antibacterial activity against gram negative bacteria (*pseudomonas aeruginosa* & *E. coli*) comparing with the standard antibiotics

Conclusion

Fagonia species disseminated all through the Mediterranean area of Africa, Afghanistan, India and Pakistan *Fagonia arabica* was broadly concentrated on by numerous specialist. The plant has number of exercises to treat malignancy, antimicrobial, viral contaminations, and absence of pain aggravation, micturritive, pyrexia, and urinary tract disease and cell reinforcement thrombolytic activities. It is likewise utilized for skin illnesses, little pox and for endothermic response in the body. The twigs of the plant are utilized as solution for snake chomp furthermore connected remotely as glue on tumors and for the swellings of neck. It likewise examined for substance and mineral constituents contains decent lot of Na, K, Ca, Mn, P, Zn, Cu and Fe. So the use of *Fagonia arabica* other than eating regimen is advantageous for the treatment of urinary release, typhoid, and looseness of the bowels and on tumors. The major phytoconstituent of

the considerable number of species are saponins and tannins flavonoids and cardiovascular glycosides.

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