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PHARMACO-MEDICINAL PROPERTIES OF VRUDHADARAKA (ARGYREIA SPECIOSA): A BRIEF REVIEW

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ABSTRACT

The term herb refers to a plant used for medicinal purpose. Medicinal herbs and plant extracts are now generally considered as effective medicines to be respected, appreciated and they play a major role in modern pharmacy. World Health Organization estimated that about 80% of the world's population relies on herbs for their primary healthcare needs. Argyreia speciosa (Burm.f) Boj. (Convulvulaceae) is commonly known as Vrudhadaruka in Indian system of medicine. Roots of A. speciosa are used in Ayurveda as aphrodisiac, rejuvenating, intellect promoting, brain tonic, in the treatment of infected wounds, bronchitis, syphilis and pulmonary tuberculosis.

KEYWORDS: Vrudhadaruka, Argyreia speciosa, Ayurveda.

INTRODUCTION

The term herb refers to a plant used for medicinal purpose. Medicinal herbs and plant extracts are now generally considered as effective medicines to be respected, appreciated and they play a major role in modern pharmacy. World Health Organization estimated that about 80% of the world's population relies on herbs for their primary healthcare needs.[1]

Argyreia speciosa Sweet (Family - Convolvulaceae) is an important ‘rasayana’ herb used extensively as an adaptogen in the Ayurvedic system of medicine. It is commonly known as Hawaiian Baby Woodrose, Elephant creeper or Woolly morning glow in English and in Sanskrit, it is called as *Vridhadaraka* meaning ‘anti-aging’. It is a large climber growing throughout India. It has been assigned various medicinal properties by Ayurvedic Materia

Medica. The root is regarded as an alternative tonic and used in cases of rheumatism and neurological disorders. A wide range of phytochemicals has been isolated from the plant and possesses various traditional and tribal uses for cure of human ailments. Pharmacological activities such as anti-oxidant, anti-inflammatory, anti-rheumatic, immunomodulatory, adaptogenic and hepatoprotective have also been reported.[2,3]

It is seen throughout India up to an altitude of 500 m and grown as an ornamental plant in gardens because of its green foliage and rose purple flowers. The plant is common in Bengal, Assam, Orissa, Uttarakhand, Rajasthan, Karnataka and Kerala. It is generally found growing in slightly moist localities like river banks, edges of lakes etc. and as undergrowth in semidecidous forests.[4]

BRIEF TAXONOMY[5]

It is a twining woody climber, reaching up to 10 m or more in height. Young shoots are densely covered with white pubescence. Leaves are alternate, simple and long petioled, 5-15 cm long. The leaf blade is fairly large, 20-30 cm in length and 20-25 cm broad, ovate or broadly ovate-cordate. Flowers are large, showy, funnel shaped, tinted purple or pale to deep rose, regular, sub capitate, with short pedicels in axillary bracteate cymes borne on stout, whitish and tomentose peduncles. Fruits are yellowish brown, smooth globose, indehiscent and irregularly crumbling berries, 1.2-1.8 cm in diam. containing 2 or 4 seeds embedded in a mealy pulp. Roots and leaves are the official parts. It can be propagated through stem cuttings (which root easily) and also by seeds.

A variety of chemicals belonging to the classes ergoline alkaloids, lipids, flavonoids, steroids and triterpenoids have been isolated from the plant. The plant has been screened for anti-inflammatory, immunomodulatory and hepatoprotective activities. Flavonoid sulphates such as Kaempferol 7-O methyl 3-sulphate, Quercetin 3’7 di-O methyl 3-sulphate and Stigmasteryl p-hydroxycinnamate have been reported from the roots.

BIOLOGICAL ACTIVITIES[6,7,8]

Many bioactivities such as antiulcer, anti-tumour, anti-diabetic, hypoglycemic, hypotensive, spasmolytic, anti-filarial, antimicrobial and CNS depressant were reported for different plant parts.[25] Antiviral, antibacterial, antifungal, antifertility, diuretic, anabolic-cum-androgen like activity and aphrodisiac activities were also reported.

Roots

The root is acrid, bitter, thermogenic, sweet, alterative, emollient, digestive, aperient, purgative, carminative, aphrodisiac, nervine, alterative, diuretic, tonic, antigonorrhoeic, intellect promoting, anti- inflammatory and antirheumatic. It is useful in anorexia, loss of appetite, dyspepsia, flatulence, colic, chronic ulcer, ascites, haemorrhoids, hemiplegia, nervous weakness, neuralgic pains, cerebral disorders, synovitis and general debility. Roots act as a cardiotonic and hence useful in cardiac debility. It possesses emaciation properties due to which it is used in obesity. It is also prescribed for leucorrhoea, diabetes mellitus, infected wounds, syphilis, cough, bronchitis, pharyngitis and pulmonary tuberculosis.

Leaves

The leaves are extensively used all over India for the treatment of ulcers, boils, carbuncles and tumours. The leaves areemollient, vesicant, antiphlogistic and are used as local stimulant and rubefacient. The leaves hasten maturation, suppuration and are absorptive, hence externally applied as emollient poultices forboils, swellings, carbuncles, foul ulcers, wounds and externally in skin diseases. It is also used as external application for ring worm infections and eczema. The leaves contain a mixture of three phytosterolins which exhibit hypoglycemic and CNS depressant activities. The leaves are reported to be effective in diabetes.

Seeds

Seed is cardio-vascular system active and spasmolytic, its extract showed hypotensive and spasmolytic properties. The seeds are misused as a hallucinogenic drug. Toxic psychosis with hallucinations, disturbances of orientation and psychomotoric agitation and anxiety after the intake of seed is reported.

PHARMACO-MEDICINAL STUDIES

Anti-inflammatory and Anti-arthritic

In a study by Kartik *et al*[9] evaluated anti-inflammatory activity of 50% ethanolic extract of *A. speciosa* using Sprague-Dawley rats following oral administration in two different doses (100 and 200 mg/kg). Inflammation was induced using 1% carrageenan. The extract significantly showed anti-inflammatory activity at 3 hours.

Gastric ulceration

The ethanolic extract (50% v/v) of the flower of *A. speciosa* (100-200 mg/kg) when administered orally, twice daily for five days showed dose dependent ulcer protective effect. A dose of 150 mg/kg given for ten days, twice daily showed healing effect against acetic acid (50%) induced ulcer index with decreased perforations.[10]

Sexual disorders

In a clinical trial involving male patients suffering from male sexual disorders, *A. speciosa* was found beneficial in conditions like erectile dysfunction, premature ejaculation, spermatorrhoea and functional impotence with no toxic effect.[11]

Nootropic

Aqueous extract of roots at doses of 100 and 200 mg/kg significantly improved memory and successfully reversed amnesia induced by diazepam, scopolamine and natural aging and also reduced acetyl cholinesterase level in brain homogenate indicating its potential in attenuating learning and memory deficits especially in aged mice.[12]

CONCLUSION

A. speciosa is a medicinal plant credited with innumerable medicinal qualities and used since ancient times. It has vast and diversified pharmacological potential. The plant is well adapted to tropical and sub-tropical climate. Many polyherbal formulations containing this plant parts are available in the market. However, less information is available regarding the clinical study, toxicity study, phyto-analytical studies of this plant. With the availability of primary information, further studies can be carried out such as clinical evaluation, phyto-analytical studies, toxicity evaluation. If these claims are scientifically and clinically evaluated then it can provide good remedies leading to the development of a novel therapeutic herbal drug.

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