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REVIEW OF THE MONOGRAPH SARACA INDICA (ROXB.)

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ABSTRACT

The oldest treatments utilised by humans since the beginning of civilization are herbal medicines. According to WHO, the majority of people in almost 80% of countries rely on herbal medicines to treat illness? Medicinal plant has a number of documented therapeutic effects. Traditional medicine uses a plant called Saraca indica, also called "ashok briksh" or "Saraca asoca (Roxb.), which botanists have recognised as a member of the Caesalpinaceae family. A remedy plant widely utilised for medicinal purposes is saraca indica. It has several uses, including analgesia, skin-improvement, digestive issues, excessive thirst, bacteriostatics, anti-inflammatory, and anti-depressants. The phytochemical component, various claimed pharmacological action, and ethanobotanical uses are all included in this paper. In light of the effects mentioned In order to investigate its potential usage and substantiate its medical claims, this plant has to undergo comprehensive investigation.

Keywords: *Saraca indica*, Medicinal plant, Pharmacological activity, phytoconstituents.

1. INTRODUCTION

The earliest medications used by humans are those made from plants. Worldwide demand for herbal goods is rising, and major pharmaceutical corporations are currently conducting extensive research on possible medical applications of medicinal plants. Before the invention of modern synthetic medications, plant medicine was utilised all over the world to cure a variety of maladies. [1] Native plant Saraca indica (Fabaceae) has a number of traditional uses [2]. The bark is used in Ayurveda to treat indigestion, pyrexia, burning sensations, colic, ulcers, menorrhagia, discharge from the vagina, and acne. Saraca indica has been linked to a number of pharmacological effects, including larvicidal, antibacterial, CNS depressant, analgesic, antipyretic, antiulcer, and anti-inflammatory effects. This review discusses phytochemistry as well aspharmacological properties of several plant components and applications in ethanol [2]. Bengali. Sometime bark of *Saraca indica* adulterated with Afanamexis polystakis bark and Sicalpinea pulchirena [3].

BOTANICAL DESCRIPTION

Evergreen saraca indica grows to a height of 7 to 10 cm. Up to an altitude of 750 metres, it occurs. The leaves are intra-petiolar, parpinnate, 15-20 cm long, oblong, slightly lanceolate, and entirely joined. Due to the presence of rounded or protruding lenticles, the bark has an irregular, dark brown or nearly black colour and is warty on the surface. Fracture splinting reveals a thin, continuous coating of whiteness. Flowers are apetalous, corymbose, golden orange, deciduous, and have petaloid calyxes. The compressed, ellipsoid, oblong, and seed-like [4].

PHYTOCHEMISTRY

Catechin, leucopelargonidin, epicatechin and 11'- deoxyprocyanidin, stearic acids- sitosterol, quercetin, kaempferol, apigenin- 7-0-p-D-glucoside, Oleic, linoleic and palmitic acid. Pelargonidin- 3, 5- diglucoside, cyanidin-3, 5- diglucoside, palmitic, stearic, linolenic, leucocyanidin, gallic acid, catechol, (-) epicatechol and leucocyanidin, lignan glycosides, lyoniside, nudiposide, 5-methoxy- 9-β- xylopyranosyl, isolariciresinol, schizandriside, epicatechin,epiafzelechin-(4β→8)-epicatechin and procyanidin B2 and β-sitosterol glucoside [5].

PHARMALOGICAL ACTIVITIES ANTIMICROBIAL ACTIVITY

The antibacterial and antifungal effects of various extracts (chloroform, methanol, aqueous, and ethanolic) of Saraca indica stem bark were assessed against various strains of bacteria, including Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, Bacillus cereus, Klebsiella pneumoniae, Proteus mirabilis, Salmonella typhimurium, and Methanolic extract, of all the extracts, was found to possess strongest antibacterial and antifungal activity [7].

ANTICANCER ACTIVITY

For potential anticancer properties, Saraca indica flowers were studied. Results showed (in vitro) cytotoxicity of 50% against Sarcoma-180 and Dalton's lymphoma ascites tumour cells at concentrations of 38 and 54 mug, respectively [8].

ANTIOXYTOCIC ACTIVITY

In isolated uterine preparations taken from rats and humans, Saraca indica showed oxytocic action. The uterus that was pregnant or estrogen-primed was more susceptible to the alcoholic extract [9].

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ANTIDIABETIC ACTIVITY

The methanolic bark extracts of Saraca indica Linn were tested for their hypoglycemic effects in both healthy and streptozotocin-induced diabetic rats. The extract has demonstrated a strong hypoglycemic activity at a dose of 400mg/kg administered orally [10].

CNS DEPRESSANT ACTIVITY

Saraca indica leaves extract in various solvent such as petroleum ether, chloroform, methanol and water shows CNS depressant activity depending upon their polarity. Phenobarbitone induced sleeping time by using actophotometer method was used to determined this activity. *Saraca indica* leaves extract significantly decreased (67.33%) the locomoteractivity in mice [11].

ANTIULCER ACTIVITY

The aqueous suspension of *Saraca indica* flowers are used to determined the antiulcer activity in albino rats. The result of the study showed that the flowers of *Saraca indica* suspension exhibit an antiulcer potential. Antiulcer potential might be due to inhibition of gastric secretion, stimulation of mucus secretion and endogenous gastric mucosal prostaglandin synthesis [12]

ANTI-INFLAMMATORY ACTIVITY

A leaf ethanolic extract from Saraca indica was tested for anti-inflammatory properties in an animal model. The paw edoema caused by carrageenan technique was employed. At a dose of 200 mg/kg of Saraca indica, the ethanolic extract considerably (P 0.01) reduced the swelling in the paws. Compared to diclofenec 10 mg/kg, the ethanolic extract of Saraca indica induced inhibition in a shorter amount of time. [13].

UTERINE TONIC ACTIVITY

Saraca indica estrogenic effect of U-3107 (1mg/kg p.o) was evaluated in normal and overiectomised rats. An aqueous suspension was administered for a period of 21 days. U-3107 holds estrogenic activity only in the presence of functional ovary and is devoid of any progestational activity [14].

ANALGESIC ACTIVITY

Aqueous and alcoholic extracts of the bark skin from Shorea robusta (Shal) and Saraca indica (Ashoka) were tested for their ability to reduce pain in Swiss albino rats. At 300 mg/kg body weight, the extracts of Shorea robusta and Saraca indica both significantly reduced pain when compared to the control group. These plants may include phytoconstituents like alkaloids and steroids that have analgesic properties. The study's findings indicated that Ashoka and Shal had analgesic properties, but more experimental and clinical research is required [15].

Larvicidal activity

Ether extract of the *Saraca indica* leaf and the chloroform extracts of the bark were evaluated for larvicidal activity. The pet ether extracts of leaves and chloroform extract of the bark of *Saraca indica* showed significant Larvicidal activity [16].

IMMUNOMODULATORY ACTIVITY

Human T-lymphocytes are subjected to apoptosis by the seed integument of Saraca indica. The seed integument of Saraca indica contains the lectin saracin. Human lymphocytes have been found to be mitogenic by saracin. Fluorescence-activated cell sorting (FACS) research showed that Saracin had a higher affinity for CD8 (+) than CD4 (+) T cells. The immune system of mammals has been found to respond well to saracin [17].

ANTIOXIDANT ACTIVITY

The antioxidant activity of various Saraca indica bark extracts, including ethanolic, hydroalcoholic, and acetone, was investigated utilising an in vitro DPPH (1, 1, diphenyl-2 picryl hydrazyl) model. The extract with the highest IC50 value is hydroalcoholic (ethanol 60%), 193.88 g/ml. The lowest IC50 value was 97.82 g/ml for the acetone extract made using the ultrasonication extraction method [18].

Antipyretic activity

Saraca asoca seed was studied for antipyretic activity using Brewer's yeast induced pyrexia in Wistar rats at oral doses of 300 mg/kg and 500 mg/kg. Both the dose levels of the research drug and standard drug aspirin (100 mg/kg) showed significant.

ETHANOBOTANICAL USES

In cases of paralysis and hemiplegia, Saraca indica's dried root is employed. Broken bones and skin injuries are treated with it. Root paste is effective for treating skin conditions such as ulcers, inflammations, and freckles. It serves as a blood cleaner. Eczema, psoriasis, dermatitis, and herpes are treated with it. Scabies, tineapedis, and pruritus are all

alleviated. Tree bark improves the tone of the skin. Ammenorhea involves the use of root. It dissolves kidney stones made of oxalic acid. Endometriosis and dysmenorrhea are helped by it. Rickets and calcium insufficiency are treated using its decoction. Diabetes can be treated using Saraca indica dried flowers. Dysentery can be treated using decoction. Treatment for hemorrhagic dysentery involves a fluid extract of Saraca indica flowers. the tree's bark is used to treat scorpion bites and internal piles. Blood cleansing with saraca indica is done. To get rid of stomach worms, utilise the leaves and bark [21].

2. CONCLUSION

One of the many universal plants with medical qualities is saraca asoca. This adaptable plant is a reliable source of medication and the source of many different sorts of chemicals. A number of pharmacological properties of Ashoka include anti-cancer, anti-menorrhagic, anti-oxytoxic, and antibacterial action. On various Saraca indica components, several phytochemical and pharmacological research have been carried out. The potential of Saraca indica as a medicinal tree is supported by the current literature. More research can be done to examine the untapped and unrealized potential of this plant given its nature.

3. REFERENCES

[1] Anitha B, Mohan VR, Athiperumalsami T, Suthaa S. Ethnomedicinal plants used by the Kanikkars of Tirunelveli District, Tamil Nadu, India to treat skin diseases. Ethnobotanical leaflets, 2008; 12:171-180.

[2] Sharma PC, Yelne MB, Dennis TJ, Joshi A, Billore KV. Database on medicinal plants used in Ayurveda. Department of ISM&H, Ministry of Health and Family Welfare (Govt. of India) 2005; 3:76-87.

[3] BL Sharma. Dravyaguna Hasthamalaka, 1 st edition, Publication scheme, Jaipur, 1957, 420.

[4] Pradhan P, Joseph L, Gupta VR, Chulet, Arya H, Verma R, Bajpai A. Saraca asoca (Ashoka): A Review Journal of Chemical and Pharmaceutical Research. 2009; 1(1):62-71.

[5] Aditya M, Anil K, Neelam R, Ashok K. Phytochemical and Pharmacological Importance of Saraca indica International Journal of Pharmaceutical And Chemical Sciences. 2013; 2(2):1009-1013.

[6] Singh A, Singh S, Sarma BK, Singh UP, Srivastava R, Singh KP. Internet J Alternative Med. 2009; 6(2):1-20.

[7] Prathiba J, Malathi R. Antimicrobial properties of the stem bark of Saraca indica (Caesalpiniaceae) European Review for Medical and Pharmacological Sciences, 2009; 13:371- 374.

[8] Kaur JD, K Misra K. J Indian Chem Soc. 1980; 57(12): 1243.

[9] Bhandary MJ, Chandrasekhar MJKR, Averiappa KMK. J Ethnopharmacol, 1995; 47(3):149-158.

[10] Preethi F, Fernandes, Jennifer, Pricilla K. Hypoglycemic activity of saraca indica Linn barks Journal of Pharmacy Research. 2010; 3(3):491.

[11] Angad V, Houtem KR, Jana Raja, Saiket S, Sandeep S, Ashutosh M. Pharmacological evaluation of Saraca indica leaves for CNS depressant activity in mice J Pharm sci. 2010; 2(6):338-343.

[12] Maruthappan V, Sakthi Shree K. Antiulcer activity of aqueous suspension of Saraca indica flower against gastric ulcers inalbino rats Njar VCO, Adesanwo J.K, Raji Y. Methyl angolensate: The antiulcer agent of the stem back of Entandrophrarma angolense. Planta Med. 1995; 61:91- 92.

[13] Mujumdar AM, Naik DG, Dandge CN, Puntambekar HM. Anti- inflammatory activity of curcuma amada roxb. In albino rats. Indian Journal of Pharmacology. 2000; 32:375- 377.

[14] Mitra SK, Gopumadhavan S, Venkatarangana MV, Sharma DNK and Anturlikar SD. uterine tonic activity of U-3107 (even care), a herbal preparation in rats, Indian journal of pharmacology. 1999; 31:200-203.

[15] Poonam SM, Jangde CR, Narnaware SD, Subhash R. Experimental evaluation of analgesic property of bark skin of Saraca indica (Ashoka) and Shorea robusta (Shal) Journal of Applied Pharmaceutical Science. 2014; 4(03):062-065.

[16] Nisha M, Anitha MG, Bala TSL, Sivakumar SM, Narmadha R, Kalyanasundaram M. larvicidal activity of saraca indica extracts against three mosquito vector species springer- verlay. 2009; 104:1017-1025.

[17] Ghosh S, Majumder M, Majumder S, Ganguly NK, Chatterjee BP. Saracin: A lectin from Saraca indica seed integument induces apoptosis in human T-lymphocytes, PMID: 10545202, Arch Biochem Biophys 1999; 371(2):163-8.

[18] Panchawat S, Sisodia SS. In vitro antioxidant activity of Saraca asoca roxb. De wilde stem bark extracts from various extraction processes. Asian Journal of Pharmaceutical and Clinical Research. 2010; 3(3):231- 233.

[19] Sasmal S, Majumdar S, Gupta M, Mukherjee A, Mukherjee PK. Pharmacognostical, phytochemical and

pharmacological evaluation for the antipyretic effect of the seeds of Saraca asoca Roxb. Asian Pacific Journal of Tropical Biomedicine. 2012; 2(10):782-786.

[20] Viswanatha Swamy AHM, Patel UM, Koti BC, Gadad PC, Patel NL, Thippeswamy A AHM. Cardioprotective effect of Saraca indica against cyclophosphamide induced cardiotoxicity in rats: A biochemical, electrocardiographic and histopathological study Indian J Pharmacol. 2013; 45(1):44-48.