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Pharmacological Review on *Ficusracemosa*

Aditya Tambe[1], Akshay Tambe[2], Dhanashree Thakare[3], Pratiksha Tikone[4], Shubham Gadge[5]
Students, Samarth Institute of Pharmacy, Belhe, Maharashtra., India[1,2,3,4]
Department of Pharmacology, Samarth Institute of Pharmacy Belhe, Maharashtra., India[5]

Abstract: *Ficusracemosa Linn. is a traditional or popular medicinal plant found in southest Asia, India and Australia. ficusracemosa has long been used in Ayurveda, the ancient system of Indian Medicine. The Ficusracemosa belongs to the Family Moraceae, it popularly known as Glomerata as well as 'Audumbara' in Marathi It is commonly known as "gular' or 'Dumur! All parts of this plant Cleaves, fuits, bark, latex and sup of root) are medicinally significant in variety of treatment such as diabetes, diarrhoea, ulcer, stomachache, piles, skin diseases, dysentry and as a carminative etc.Ficusracemosa Linn imparts vital role as anti-oxidant, anti-cancer, anti-diuretic, anti-bacterial, anti inflammatory and gastro protective agent etc.this review, research is associa ted to therapeutic properties, phytochemistry and pharmacological profile of Ficusracemosa Linn.*

Keywords: Pharmacological activity, Dumur,Carminative,GlycosideMoraceae, Medicinal Plant.

I. INTRODUCTION

Ficusracemose popularly known as the Audumbar,cluster fig tree,Indian fig tree or goolar (gular) which is also called as FicusglomerataRoxb, is a plant species belongs the family Moraceae. In India, the tree fruits are called gular. Different parts of Ficusracemose shows Antibacterial, Hepatoprotective , Antitussive, Antiulcer, Wound healing, Anthelmintic, Antidiuretic effect, Antidiarrheal, Chemo preventive effect on the nephron, Anticancer, Antiinflammatory activities etc. on various extracts.Antibacterial means anything to destroy bacteria or suppresses their growth.Antimicrobial activity is the process of inhibiting or killing the disease caused due to microbes while Antifungal activity is destroy fungi or inhibiting fungal growth.Latest and previous studies have concluded the beneficial aspects of fruit of the plant shows Antimicrobial, Antibacterial and Antifungal activity using different cultures comparing various extracts.

II. PLANT PROFILE

III. SCIENTIFIC CLASSIFICATION

Kingdom	Plantae
Clade	Angiosperms
Clade	Eudicots
Order	Rosales
Family	Moraceae
Sub family	Moraceae
Genus	Ficus
Species	Ficusracemosa Linn.

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IV. DESCRIPTION

4.1 Macroscopic Characters

Ficusracemosa is an moderate ,evergreen to large sized spreading, lactiferous tree,without much prominant aerial roots.Tree about 20m tall with roots,bark-whitish brown smooth.Leaves minutely hairy,lamina ovate-lanceolateto elliptic lanceolate.8-10 pairs of lateral pairs from broad to narrow cuneate,marginentire,oblique base, glabrous on both sides.Male flower are sessile, ostiolarin 2-3 whorls,united,lobes dentate and stamens,gall flowers pedicellate.Female flowers are sessile or subsessile,stigmasimple.Seeds are lenticular 1 mm.

Microscopic Characters

A. Anatomical Structure

TS.of young stem comprising of bark was taken as the mature bark was brittle and contained large amounts of secondary cells.Plant showed a periderm consisting of following three layers:-

1. Outer phellum (cork); consisted two layers of thickly suberised cells.
2. Middle phellogen (cork cambium): forms a continuous layer of tangentially elongated and thin walled cells.
3. Inner phelloderm (secondary cortex): consisted a few layers of parenchymatous cells, some of the cells contained numerous chloroplasts, while a few others showed thick walled fibers.

Leaves: The leaves are dark green, 6-10 cm long, glabrous; receptacles small subglobose or piriform, in large clusters from old nodes of main trunk.

Fruits: The fruits receptacles are 3-6 cm in diameter, pyriform, in large clusters, arising from main trunk or large branches. The fruits resemble the figs and are green when raw, turning orange, dull reddish or dark crimson on ripening. The fruit of FicusRacemosa Linn is 3/4inch to 2 inches long, circular and grows directly on the trunk.

Seeds: The seeds are tiny, innumerable and grain-like. Outer surface of the bark consists of easily removable translucent flakes grayish to rusty brown, uniformly hard and non-brittle.

Bark: The Bark is reddish grey or grayish green, soft surface, uneven and often cracked, 0.5-1.8 cm thick, on rubbing white papery flakes come out from the outer surface, inner surface light brown.

Roots: The roots of F.racemosa are long, brownish in colour. It's having characteristic odour and slightly bitter in taste Roots are irregular in shape.

Chemical Constituents

The stem bark of Ficusracemosa Linn contains tannin, wax, saponingluanol acetate, β-sitosterol (A), leucocyanidin- 3 – O – β – D - glucopyrancoside, leucopelargonidin – 3 – O – β – D - glucopyranoside, leucopelargonidin – 3 – O –α–L-rhamnopyranoside, lupeol (C),cerylbehenate, lupeol acetate, α-amyrin acetate(B), Glycosides, epicatechin, caffeicacid, tannins, anthocyanins, flavonoids. Leaves ,barkand fruits of F.benzamina contains cinnamicacid, stigmasterol, naringenin, quercetin, lupeolacetate, oleanolic acid, α and β amyrine. β-sitosterol (A) leucocynanidin-3-o-β-D-glucopyranoside

Pharmacological Activity

1. **Antidiuretic:** The decoction of the bark of F. racemosa is claimed as an antidiuretic and its potential is evaluated in rats using three doses (250, 500 or 1000 mg/kg). It had a rapid onset (within 1 h), peaked at 3 h and lasted throughout the study period (5 h). It also caused a reduction in urinary Na+ level and Na+/K+ ratio, and an increase in urinary osmolality indicating multiple mechanisms of action.[30]
2. **Antiulcer:** The 50 % ethanol extract of fruits was studied in different gastric ulcer models, viz pylorus ligation, ethanol and cold restraint stress induced ulcers in rats at a dose of 50, 100 and 200 mg/kg body weight p.o. for 5 days twice daily. The extract showed dose dependent inhibition of ulcer index in all three models of ulcer.[25]
3. **Anti-inflammatory**:The anti -inflammatory activity of F. racemosa extract was evaluated on carrageenin, serotonin, histamine and dextran-induced rat hind paw edema models. The extract (400 mg/kg) exhibited maximum anti-inflammatory effect of 30.4, 32.2, 33.9 and 32.0% with carrageenin, serotonin, histamine, and dextran -induced rat paw oedema, respectively.[36]

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4. **Hypoglycemic:** The glucose - lowering efficacy of methanol extract of the stem bark was evaluated both in normal and alloxan - induced diabetic rats at the doses of 200 and 400 mg/kg p.o.[24]
5. **Anti bacterial activity:** Different extracts of leaves were tested for antibacterial potential against Escherichia coli, Baciluspumitis, Bacillus subtilis and Pseudomonas aureus. Out of all extracts tested, petroleum ether extract was the most effective extract against the tested microorganism.[21]
6. **Antitussive:** The methanol extract of stem bark was tested for its antitussive potential against a cough induced model by sulphur dioxide gas in mice. The extract exhibited maximum inhibition of 56.9% at a dose of 200 mg kg-1(p.o.) 90 min after administration.[32]
7. **Anti-diarrhoeal:** Ethanol extract of stem bark has shown significant inhibitory activity against castor oil induced diarrhea and PEG2 induced enter pooling in rats and also showed a significant reduction in gastro intestinal motility in charcoal meal test in rats which proves its efficacy as anti-diarrheal agent.[21]
8. **Anthelmintic:** The crude extracts of bark were evaluated for anthelmintic activity using adult earthworms; they exhibited a dose-dependent inhibition of spontaneous motility (paralysis) and evoked responses to pin-prick, which was comparable with that of 3% piperazine citrate. However, there was no final recovery in the case of worms treated with aqueous extract suggesting wormicidal activity.[19]
9. **Renal anticarcinogenic:**F.racemosa extract (200 mg kg-1 body weight and 400 mg kg-1 body weight) resulted in a significant decrease in xanthine oxidase, lipid peroxidation, γ- glutamyltranspeptidase and hydrogen peroxide. There was significant recovery of renal glutathione content and antioxidant enzymes, decrease in the enhancement of renal ornithine decarboxylase activity, DNA synthesis, blood urea nitrogen and serum creatinine.[41]
10. **Analgesic:** The ethanol extract of bark and leaves was evaluated for analgesic activity by analgesiometer at 100, 300 and 500 mg/kg and was found to possess dose dependent analgesic activity.[45]
11. **Wound healing:** Ethanol extract of stem bark showed wound healing in excised and L L model in rats.[18]
12. **Anti-oxidant activity:** Ethanol extract and water extract were subjected to free radical scavenging both by steady state and time resolved methods. The ethanol extract exhibited significantly higher steady state antioxidant activity. It also exhibited concentration dependent DPPH, ABTS, hydroxyl radical and superoxide radical scavenging and inhibition of lipid peroxidation when tested with standard compounds.[28]
13. **Anti-filarial:** Alcoholic as well as aqueous extracts caused inhibition of spontaneous motility of whole worm and nerve muscle preparation of Setariacervi characterized by increase in amplitude and tone of contractions. Both extracts caused death of microfilaria in vitro. LC50 and LC90 were 21 and 35 ng/ml respectively for alcoholic, which were 27 and 42 ngml-1 for aqueous extracts.[39]

V. CONCLUSION

This plant is most important & shows Various therapeutic properties. The different parts of plant contains Various Chemical Constituents Shows activity against several disease. A racemosa extracts has proved to possess various pharmacalogical properties & potent therapeutic agent A safety profile analysis showed that the Ficusracemosa is safe in therapeutic doses.It is imperative that more clinical and pharmacological studies shouldbeconduted to investigate the unexploided potential of this plant.

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