PHARMACOLOGICAL OVER REVIEW ON MEDICINAL PLANT IN ***PTEROLOBIUM HEXAPETALUM*** (Roth.) Sant and Wagh,.

Saravanan R*, Saravanan P, Gomathi V.

Department of Pharmacology, Vinayaka Mission's College of Pharmacy, Vinayaka Missions Research Foundation (Deemed to be University), Kondapapanaikenpatty, Salem-636008, Tamilnadu, India.

ABSTRACT:

The plants are being used as medicine to heal various disorders from the earliest starting point of the progress. *Pterolopium hexapetalum* belonging to the family of *fabaceae* is distributed in some hills station of India and other region in the world. The different part of the *pterolopium hexapetalum* is used traditionally in treatment of fever, chest pain, cough, dog bite, ulcer, diarrhea, constipation, jaundice, labor pain, and also skin infections. *P.hexapetalum* has been investigated by researches for its biological activities and therapeutic potentials such as an antimicrobial, antifungal, antiulcer, antipyretic, antidiarrheal activities.

KEYWORDS:

Pterolopium hexapetalum, antimicrobial, antifungal, antipyretics, antiulcer, fabaceae.

INTRODUCTION:

Shervarayan hills are enriched with a broad diversity of medicinal plants in tamilnadu[1]. The local Malayali tribes[2]; and the herbalists are used *pterolobium hexapetalum*(all parts against a large number of therapeutic activities. Stem bark used for fever, cough, toothache, chest pain, dog bite (rabies), vomits, heat boils; diarrhoea, constipation and, piles, bone fracture, jaundice, ulcer, skin infection, wound healing; flowers against venereal diseases, skin infections[3]; fruit and seed to cure with diarrhea, constipation and piles, cough and cold, treating ulcer[4]; leaves against childbirth pains[5-6].stem bark decoction in case of whooping cough in case of infants and bark extract in case of dyspepsia in cattle[7] .It is a characteristic dry deciduous straggling shrub on forest tree canopy with mass flowering known as "*Karu Inthu"* in Tamil,

commonly known as Indian red wing. It is also a major source of nectar and pollen for honey bees which yield very sweet pleasant aroma honey[8].

Ethno therapeutic noteworthiness of the family *cesalpiniaceae* is settled chiefly with the types of bauhinia, cassia, caesalpinia, saraca, sophora and, tamarindus. B.vahli against bone breaks, bauhinia variegata an astringent, carminative, anthelmintic, remedy to wind venum, diuretic against loose bowels, the runs, skin infections, ulcers, heaps and, uncleanliness [9]. Noteworthy cell reinforcement action was seen with b. Variegata alcoholic and fluid concentrates with a $p< 0.01$ lessening power and $p< 0.001$ for rummaging dpph, super oxide, nitric oxide and hydrogen peroxide revolutionaries. And furthermore the concentrates indicated critical decrease in plasma cholesterol, fatty oil, LDL and VLDL and increment plasma HDL levels and shows antihyperlipidemic activity[10]. B. Purpurea bark with underlying foundations of ziziphus mauritiana utilized for looseness of the bowels, blossoms for heaps and diarrhea. B.racemosa leaf decoction to treat intestinal sickness; root bark concentrate to fix the runs; stem bark extricate blended in with goat milk against epilepsy. B. Purpurea stem ethanolic removes against diabetic movement and androgenic property[11]. B.vahli bark and leaf squeeze remotely applied on wounds to check extreme dying; pull remove for dysentery[7].

PLANT DISCRIPTION[12-15]:

Taxonomy:

Kingdom : Plantae

Class : Eudicots

Order : Fabales

Family : Fabaceae

Subfamily : Caesalpinioideae

Genus : Pterolopium

Species : p.hexapetalum.

VERNACULAR NAMES:

Tamil : Karu Indu

Telugu : Walekadooda

Kannada : Baadu bakka

Malayalam : Endam

Others : Indian Redwing.

Figure .1 pterolopium hexapetalum.

HISTOCHEMICAL ANALYSIS:

Sum of 12 flavonoid mixes in Leaf myricetin, quercetin, vitexin[19]; Stem Bark contain luteolin, vitexin[18]; Flower contains Myricetin, kaempferol, orientin[19] in Fruit contains Myricetin, quercetin, luteolin, vitexin[20]. Regular compound myricetin present in leaf, Blossom and natural product; Quercetin in leaf and, natural product; Vitexin in leaf, stem bark and natural product; Luteolin In stem bark and, natural product. Huge mixes Present in roses are Kaempferol and Orientin. In 38 Phenols and 10 anthocyanidins compounds present in all part of the pterolopium species[21].

ANTIMICROBIAL ACTIVITY:

Leaf and Stem bark separate in all solvents (Hot water, Methanol, Ethanol, Ethyl acetic acid derivation, Benzene and, Chloroform) were tried on chosen microorganisms(Bacillus subtilis, Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa). Viable restraint was seen against all microbes with heated water concentrates of leaf and stem bark at 10mg/circle followed by methanol extricates at 20mg/circle. What's more, MIC esteems likewise runs between 0.312mg to 1.25 mg S.aureus (0.312), B.subtilis (0.312), P.aeruginosa (0.625) and E.coli (1.25) with leaf and bark removes (Graph-1, 2). It additionally

demonstrated that P.hexapetalum removes are more potential when contrasted with that of control drug Gentamycin at 10mg/circle against all microorganisms[22].

ANTI ULCER ACTIVITY:

Antiulcer activity of P.hexapetalum leaf methanol and organic product watery concentrates likewise related to the other Caesalpiniaceae individual's antiulcer movement. Caesalpinia bonducella leaf methanol separate in ibuprofen in addition to pylorus ligation instigated ulcerous rodents at 100, 200mg/kg b.wt demonstrated 2.10, 1.26 ulcer file and 53.33, 72% of insurance separately contrasted and standard medication Omeprazole at 20mg/kg b.wt ulcer record 1.10 and 75.55% of security; In HCl in addition to ethanol instigated ulcer model, the plant remove at the dosages of 100 and 200mg/kg b.wt indicated noteworthy gastro defensive movement 55.9% and 82.36% separately[23]. In water submersion stress, the plant separate at the portions 100 and 200 mg/kg indicated critical gastro defensive movement with 84.29 and 92.14% individually[24].

ANTIFUNGAL ACTIVITY:

Antifungal activity against *A. niger* and *C. Albicans* with leaf aqueous, methanol, benzene, alcohol,l and ethyl acetate extracts at 10mg/ml showed, the highest activity was observed than the control drug *Nystatin* as 35.60, 35.50, 29.75, 17.75, 13.0 mm Zone of Inhibition respectively[25]. Stem bark aqueous, methanol, and chloroform extracts showed effective activity ranging from 27.25 to 29.50 mm. Flower aqueous, alcohol and methanol ranging from 20.75 to 31.25 mm, fruit aqueous, methanol and benzene extracts ranging from 34.50 to 36.00 mm showed most effective on both the selected pathogens than the control drug. Overall leaf and fruit extracts showed the highest activity on both the strains with 35.75 and 36.00 mm diameter zone of inhibition than the control drug *Nystatin* 10.20 to 12.10 mm respectively[26].

ANTI DIARRHEAL:

The watery and methanolic extract of P.hexapetalum leaf and organic product at the dosages of 50, 100mg/kg indicated huge decrease up to 70% in the recurrence of defecation, number of fecal droppings and mean load of stool. These outcomes are intently contrasted and the antidiarrhoel action of Saraca asoca stem bark hydro liquor removes 200mg/kg b.wt with 56.77% of inhibition[33]. The starter phytochemical examination of the watery and methanolic extract of P. hexapetalum leaf and natural product indicated the presence of tannins and flavonoids which might be answerable for the huge antidiarrhoeal activity.[18,21,27,28-32]

ANTI PYRETIC ACTIVITY:

The methanolic leaf extract of pterolopium hexapetalum at a dose of 400mg/kg weight showed maximum antipyretic effects. They keep up typical internal heat level and lessen bubbled milk actuated raised rectal temperature in rodents and their impact is equivalent to that of standard antipyretic medication paracetamal. Antipyretic action is regularly referenced as an attribute of medications or mixes which inhibitorily affect prostaglandin-biosynthesis[34].

CONCLUSION:

Pterolopium hexapetalum is used by malayali tribes of western ghats to cure many aliments, which forms a basis to carry out the research activities. Different part of p.hexapetalum are being used in the traditional system of medicine to cure various disease of human kind. Researchers are confirmed and reported in few pharmacological activities of p.hexapetalum and proved to be safe. In future attempt has to be done to prove all the traditional significance of p.hexapetalum.

REFERENCES:

1.Hajra PK, Mudgal V. Calcutta: Botanical survey India; 1997. Plant diversity hot spots in india: An overview; p.3.[google scholar]

2. Kshirsagar RD, Singh NP. Less-Known ethnomedicinal uses of plants in coorg district of Karnataka state, southern India. Ethnobotany. 2000;12:12-16.

3. Duraipandiyan, V., Ignacimuthu, S., and Muniappan Ayyanar. Antimicrobial activity of some of Ethnomedicinal plants used by Paliyar tribe from Tamilnadu, India. BMC Complet. & Alter. Med. 2006: 6(35): 1472 – 6882.

4. Pullaiah Encyclopedia of world Medicinal Plants. Regency. Publications.2006: Vol:4, P:42.

5. Ganesan, Suresh. N, Kesaven. Ethnomedicinal survey of lower Palani hills of Tamilnadu, Indian Journal of Traditional Knowledge, 2004: Vol: 3(3),P;P:299-304.

6. Samuel Karunyal J. and Andrews B. Traditional Medicinal Plant wealth of Pachalar and Periyur hamlets Dindigul district,Tamilnadu. Indian Journal of Traditional Knowledge2010: Vol. 9 (2), pp: 264-270.

7. Sankara Rao, M. Ethnobotanical studies of Srikakulam District, A. P., India. 2010: Ph.D. thesis, Department of botany, Andhra University.

8. Shiny Rehel, Trees Bees use BHOCA -a bee forage plant, Bees for Developmental Journal 82.

9. Negi KS, Tiwari JK, Gaur RD and Pant, KC. Notes on ethno botany of five districts of Garhwal Himalaya, Uttar Pradesh, India, Ethno botany, 1993: 5: 73-81.

10. Rajani G.P and Purnima Ashok. Invitro antioxidant and antihyperlipidemic activity of Bauhinia variagata Linn. Indian Journal of Pharmacology. 2009: Vol 41 (5), pp: 227-232.

11. Murali Krishna KS, Latha KP, Shreedhara CS, Vaidya VP, Krupanidhi AM. Effect of Bauhinia purpurea L. on Alloxan-induced diabetic rats and isolated frog's heart. Int. J. Green. Pharm. 2008:Vol. 2:8, 3-6.

12. kavitha bommana et.al./ journal of pharmacy research. 2012.5(5), 2756-2757.

13.DK Ved, Suma Tagadur Sureshchandra, Surekha K.V, and Nikil Desale.2016.(envis.frlht.org/frlhtenvis.nic.in). FRLHT's ENVIS centre on Medicinal Plants,Bangladesh.

14.Pterolobium hexapetalum (Roth) Sant.&Wagh, Bull.Botony Survey. India 5:108.1964; vajr., FL.Palghat Dist.183.1990; Sanjappa, Legumes Ind.34. 1992; Sasidh., FL.Chinnar WLS115.1999; Sasidh..FL Parambikulam WLS 108.2002.

15.Pterolobium Indicum A.Rich.,FL.Abyss. 1:247.1847; Hook.F., FI.Brit. India 2:259.1878: Gamble, FI. Pres. Madras 395(280).

16. Kavitha Bommana, Yasodamma Nimmanapalli, Alekhya Cheruku."Antifungal activity of *Pterolobium hexapetalum* (Roth.) Sant. And Wagh."*Indo American Journal ofpharmaceutical research.* 2013: 3(10).

17. Jain SK, Rao.RR, A. Handbook of field and Herbarium. *Today and Tomorrow printers and Publishers*, New Delhi,1977.

18. Kokate CK, Purohit AP and Gokhale SB. Pharmacognosy-Nirali prakashan, Pune,India, 2003, 1 - 624.

19. Kavitha. Bommana, Yasodamma Nimmanapalli, Alekhya Cheruku .*In-vitro* Antibacterial and Phytochemical Studies of "*Pterolobium hexapetalum* (Roth.)Sant. and Wagh." A Medicinal Plant of Nallamalai Hills, Andhra Pradesh. *Journal of Pharmacy Research* 2012, 5(5); 2750 - 2757.

20. Bauer AW, W.M.M. Kirby. J.C. Sherris and Turck M. Antibiotic susceptibility testing by a standardized single disk method. *American.Journal of clinical pathology.* 1966: Vol. 36, pp: 493-496.

21. Patil KS, Ganesh Wadkar, Sunil Mathapati, Maheshwar Hogade, Sunil Karate, Sunil Deshpande. Anti-ulcer activity of *Caesalpinia bonducella* (Linn). Flem. Leaves. Natural Remedies. 2010: 10(2).

22. Harshada Takawale. Vaishalimute, Deorao awari, Hikkeri VI, Preetimehta and Pallavi vawhal. Screening of antiulcer activity of *Caesalpinia pulcherrima.* Bark against Aspirin induced ulcer in rats. World Journal of Medical sciences. 2011; 6(4):168-172.

23. Avinash. P, Idress H. Attitalla, Ramgopal. M, Santhosh Ch, Balaji. M. *In-vitro* antimicrobial and antioxidant activities ofbark extracts of *Bauhinia purpurea*. African Journal of Biotechnology, 2011; 10 (45); 9160-9164.

24. Hassan. H.S, Sule. M.I, Usman. M.A, Ibrahim. A. Preliminary phytochemical and antimicrobial screening of the stem bark extracts of *Bauhinia rufescens* Lam. Using some selected pathogens, 2009; 2 (2); 53-55.

25. Maniekam. Antihyperglycemic activity of phenolics from *Pterocarpus marsupium*, Journal of Natural Products, 1997; 60; 609-610.

26. Mukherjee PK, Saha K, Murugesan T. Screening of antidiarrhoeal profile of some plant extracts of a specific region of WestBengal, India. Journal of Ethnopharmacology, 1998; 60:85-9.

27. Galvez J, Zarzuelo A, Crespo ME. Antidiarrhoel activity of *Euphorbia hirta* extract and isolation of an active flavonoids constituent. Plant Med, 1993; 333-6.

28. Okudo T, Yoshoda T, Hatano T. New methods of analyzing tannins. Journal of Natural Products, 1989; 52: 1-31.

29. Evans WC. Pharmacognosy, Singapore; Har Courtbrace and Co. Pvt. Ltd, 1997.

30. Di Carlo G and Autore G, Izzo AA. Inhibition of intestinal motility and secretion by flavonoids in mice and rats: structure-activity relationships. Journal of Pharmacology, 1993; 45: 1054-9.

31.Panchawat S, Sisodia SS. In-vivo antidiarrhoel activity of extracts from stem bark of *Saraca asoca* Roxb.prepared by different extraction methods. International Journal of Pharmaceutical BioSciences.2012; 2 (3): 338-343.

32.Santos ARS, FilhoVC, Niero R, Viana AM, Moreno FN and MM Campos, Journal of Pharmacy and Pharmacology, 1994, 46: 755.