

Report on some common hepatotonic and anti-jaundice herbs in Darbhanga locality of India

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ABSTRACT

A number of diseases are cured by herbs or its extract from time immemorial by local Vaidyas 'or' specialists. Several Ayurvedic Companies prepare their products from herbo-minerals viz-Liv-52-a potent hepatotonic medicine. Several drugs of homeopathic Science are totally depend on potential preparation from herbs gaining popularity among the people. *Chelidonium majus* a member of Papaveraceae is famous homeopathic medicine used for liver disorder. So it will be better for the botanists to look into the potentialities of local herbs growing as wild plants.

Keywords: *Jaundice, Herbs, Hepatitis, Virus, Hepatotonic, Regeneration, Contaminated water, Bilurubin, Bromosulphalein.*

INTRODUCTION

Ayurveda, the Indian indigenous system of medicine, dating back to the vedic age (1500-800 B.C) has been an integral part of Indian culture (Weiss, 1987). The term comes from the Sanskrit root- 'Ayu' means life and 'Veda' means knowledge. As the name implies, it is not only a science of treatment of the illness but covers the whole range of happy human life, involving the physical, metaphysical and the spiritual aspects. Jaundice is common disease among the people of north Bihar specially of Darbhanga district of India. In north Bihar and also in some parts of Nepal, water is abundant but its various use is unscientific 'or' without proper treatment. So far District Darbhanga is concern, it is a missionary head quarter having Municipal Corporation for civil amenities. It is situated between the rivers of the Kamala and the Baghmati. Geographically it is situated at the co-ordinates; 26.17 N 85.9 E. It's population is about 3.00 lakhs (2011) and is 52m (171ft.) high from the sea level. Lalit Narayan Mithila University, Darbhanga is situated in the campus of Darbhanga Maharaj, measuring about 250 acres. The campus having vast biodiversity of plants which include timbers, ornamentals as well as medicinal ones. The term jaundice is used to designate a situation where there is an increase of bile in the blood due to absorption of the flow of bile from the liver. This is due to some blockage of the small canals that lead the bile away. When the flow of bile is thus hindered, it is absorbed into the blood stream giving the eyes and skin a greenish yellow color. The liver tissue is destroyed to a greater or lesser extent depending on the severity of the case. The liver however has marked powers of regeneration and healing. It will continue while the destructive process is still going on. The cause of infectious hepatitis is a virus that gains entrance to the body through contaminated water. Unfortunate incidents have occurred where an epidemic of jaundice has followed an

accidental contamination of the city water supply. Carriers are about all the time and are unknown to anyone. There is always a chance that excreta from them will contaminate the drinking water. Those who recover from the disease may be carriers for a period of one to five years. It is highly important that stools are not passed near the village well or any place from where there may be seepage into the well. The mortality rate is 15%. In severe cases, cortisone is used, but in mild cases bed rest with a nourishing diet is sufficient (A.C. Selmon). Bed rest must be continued for three weeks or until the blood tests show that it is safe for the patient to be up. The bilirubin that causes the color change in the skin should be down to 1 mg per 100cc. of blood and the bromosulphalein dye retention should be low enough to show 15% in 30 minutes (Philips Nelson). These tests must be done in a laboratory. In case of doubt, the patient should not be allowed to resume duty because it will be fatal to him/her as relapse rate is very high.

MATERIALS AND METHODS

A survey was done in the L. N. Mithila University Campus, Darbhanga, India and its nearby areas to collect anti-jaundice herbs. Its identification was done for the preparation of herbarium. Several people and patients were consulted for its use in Jaundice and its effect. During survey, the following six species *Lippia nodiflora*, *Boerhaavia diffusa*, L., *Eclipta alba*, *Andrographis peniculata*, *Tinospora cordifolia* and Gumma (*Leucas*) were investigated. Survey report showed a over whelming result. Among these herbs *Lippia*, *Boerhaavia*, *Eclipta* and Gumma (*Leucas*) had gained greater popularity among the local peoples due to easy availability. *Andrographis* occurred rarely in this area while *Tinospora* was found on the trees so their use was slightly restricted.

RESULTS AND DISCUSSION

Identification of Herbs

- 1. *Lippia nodiflora*: Rich. (Syn. *Phyla nodiflora*, Green H. and B. Bhuiokra local name - Makuna):** It is member of family Verbenaceae, an annual prostrate herb appearing abundant during rains; stem strigose with short hairs, leaf opposite, spatulate, cuneate, serrate nad hairy, inflorescence axillary head of small white sessile flowers born on oblong cylindrical torus; flowers bracteates, complete, hypogynous, zygomorphic calyx bifid, pubescent; corolla weakly bilipped with 5-short lobes, lower lip bigger; style short, stigma oblique; fruit of 2 pyrenes embraced by persistent calyx and bracts. It is also used as antibacterial, diuretic, parasiticide and refrigerant (Duke and Ayensu; 1985)
- 2. *Boerhaavia diffusa*, L. (Pigweed; H. thikri; B. Punarnava):** It is a member of family Nyctaginaceae, perennial or annual prostrate or sub erect herb, appearing as a weed, very common in grassy places, flowering through out the whole year and abundant during rains. Pinkish green herbaceous; leaf simple, exstipulate, petiolate, upper face of the petiole with a median groove, opposite-decussate (leaf pair unequal), dorsiventral, uncostate, reticulate, entire acute, ovate, green above and whitish beneath, glabrous; Inflorescence both terminal and axillary panicle of umbellate cyme, an individual umbel with 2-3 minute flowers, flowers bracteates, and bracteolate, complete, bisexual, hypogynous, pedicillate, regular heteromerous, tetracyclic, dichlamydeous very small sized red colored, Stamens two or three, style slender ending in obtuse peltate stigma; fruits, cleavate, ribbed,

glandular, 1-seeded. The plant is a very common weed on the road side and old walls of L. N. M. U. campus and most abundant in rainy season.

3. ***Eclipta alba*: Hassk (H. Mochrand, Babri, Bhingraj: B. Kesari):** It is a member of family compositae, a diffuse or erect herb growing commonly in pasture land, flowerings from August to February; profusely branched, strigillose hispid or hirsute with the hairs rising from a thickened base; leaf toothed or sub-entire, oblong or elliptic; head subglobose outer flowers with a narrow white ligule; involucre bracts ovate, acute or obtuse; pappus obsolete or of 2 short awns or teeth. The flowers are biserial, the outer broader, receptacle flat with slender plumose, paleae. Ray Florets pistillate, disc florets bisexual, pappus of two minute, connate scales; corolla of pistillate flowers ligulate, bifid and those bisexual flowers tubular with 4-5 lobes; stamens 5, epipetalous, syngenesious, ovary inferior, unilocular, 1 ovuled, achenes of ray florets triquetrous, warted, those of disc florets compressed. It is a pantropical weeds, distributed throughout India in wet or moist waste land and cultivated fields. It is reported to possess myocardial depressant and hypotensive effect (Gupta *et al.*, 1976). It is also used for the effective treatment of infective hepatitis (Dixit and Achar, 1979 and Dube *et al.*, 1982), Chandra *et al.*, (1987) found that *E. alba* is effective against liver injury and inflammation.
4. ***Andrographis paniculata*: Nees. (H. Kalmegh; B. Chiretta) :** It is a member of family Acanthaceae, annual erect herbs (1-3' high), wild, mesophyte, autophyte, flowerings from Sept-May; stem erect, herbaceous, branched, solid, quadrangular, nodes and internodes distinct glabrous below and glandular hairy above, greenish; leaf petiolate, simple, stipulate, opposite decussate, dorsiventral, unicostate, reticulate, green, linear-lanceolate or lanceolate (1.5 to 2.5" long), entire, acute, base attenuate, glabrous. Inflorescence – both axillary and terminal panicle of sympodia racemose-cymes; flowers erect on the branchlet of dense spreading large pyramidal panicle. Flowers are bracteates, bracteolate, complete, pedicillate bisexual, hypogynous, zygomorphic, heteromeric tetracyclic dichlamydeous small sized, pale purple coloured. The stem is used as a fibrifuse and liver tonic. The extract is prescribed for diarrhoea, convulsions and epilepsy also. The drug is reported to be specific remedy for all types of fever especially intermittent fever, Laxative, dry, cooling, bitter, light and overcomes difficulty in breathing, burning sensation, cough, oedema, thirst, skin diseases, ulcers, worms, acidity and liver complaints (Aiyer and Kolammal, 1962.). The entire plant is medicinal. It is also used in upper respiratory infection. (Coon. and Ernst, 2004)
5. ***Tinospora cordifolia* (Guduchi):** It is a member of family Menispermaceae. This plant in a glabrous climbing shrub found throughout India typically growing in deciduous and dry forests, leaves are heart shaped, its bark is succulent, creamy white to gray in colour with deep clefts spotted lenticels. It is noticed by the presence of slender aerial roots often growing on mango or neem trees. Flowers are yellow; inflorescence in racemes. Fruits are drupes become red when ripe. Its juice contains diterpene compounds *e.g.* tinosporone, tinosporic acid, cordifolisides A to E. *etc.* Its medicinal use as hepatoprotectant, protecting the liver from several toxins. The plant has a long history of use in India. It is generally used as extract obtained by wetting its stem pieces in water container for whole night then it is filtered, boiled and cooled. It is taken as morning sip. Its leaves are simple, alternate, long petioled, lamina, broadly ovate-cordate, shortly acuminate at apex to 9 X 8 cm; flowers green, unisexual in dioecious spikes, mostly in the axils of fallen leaves, sepals

3+3, free; petals 6; stamens in male 6; in female flowers carpels 3, with 6 subulate staminodes ; fruit drupaceous, ovoid or ellipsoid. The mature stem is acrid, bitter, hot, restorative, and digestive tonic. It cures fever, Jaundice, thirst, burning sensation, diabetes, piles, skin ailments, respiratory disorders, neurological diseases and improve intellect. (Adhvaryu *et al.*, 2008).

6. **Gumma- (*Leucas cephalotes/ aspera*)** : It is commonly known as spider wort, drop pushpi. It is annual branched, erect, stout plant and belongs to family Labiatae. It is used against snake bite, anticancer, blood purifier, skin diseases, eczema, allergy, bronchitis or asthma and hepatotoxic anti-helminthic, antiseptic, anti-scabies, anticoagulant. anti-pyretic, stimulant expectorant, anti-inflammatory, anti-diabetic, potent anti-filarial, cure epileptic convulsion, cerebral disorder. It contains Laballanic Acid, B-Sitosteroid, oleanolic acid *etc.*

*Andrographis**Eclipta**Lippia**Boerhaavia**Tinospora**Gumma*

The clinical studies conducted by Bhalla *et al.* (1971) proved that *B. diffusa* root possess an anti-inflammatory and anti-arthritis activity. The root extract also showed hypotensive activities in anaesthetized dogs (Ramabhimaiah *et al.*, 1984) and cardiovascular action in rats and cats (Ojewole Jao and Adesina, 1984). Leaves and roots are also used as diuretic, and against, dropsy, in gall bladder pain. (Rawat *et al.*, 1997).

It has been found that some herbs like *Lippia nodiflora*, *Boerhaavia diffusa*, *Eclipta alba*, *Andrographis peniculata* and *Tinospora cordifolia* and *Leucas aspera* *etc.* were very effective against jaundice which resembled some earlier works/ (Gupta *et al.*, 1976; Dixit and Heber, 1979 and Chandra *et al.*, 1987). These herbs are used alone or in combination. These are finely ground and mixed with sugar candy. This mixture is dissolved in water and

used three or four times a day for at least one to two weeks. It is a common medicine among the people of low income group in rural areas as well as nearby town. Its administration shows a remarkable recovery.

CONCLUSION

This survey showed the presence of above described herbs in a good number particularly in rainy season or in the vicinity of this season. These plants need proper care, and general awareness among the people and researchers to investigate its further biochemical and ethno botanical use through the increasing use of biotechnology, tissue culture, genetic engineering, for the overall welfare of human beings.

REFERENCES

1. Adhvaryu, M. R. and Vakharia, S.C.2008. Prevention of hepatotoxicity due to anti tuberculosis treatment: A novel integrative approach. *World Journal of Gastroenterology* 14(30) : 4753-4762.
2. Coon, J. T. and Ernst, E. 2004. *Androugraphis peniculata* in the treatment of upper respiratory tract infection. A systemic review of Safety and efficacy, *Planta Medica* 70(4) 293-298.
3. Dr. William Boericke "Homeopathic Materia Medica"
4. Duke, A and Ayensu, S. 1985. Medicinal plants of china Ref. Pub, Inc. ISBN-917256-20-4
5. Rawat, A. K., Mehrotra, S., Tripathi, S. C. and Shomey, U. 1997. Hepatoprotective activity of *B. diffusa* A. popular Indian Ethno Medicine. *J. Ethno Pharma Col.* 561:61-66.
6. Selmon, A. C. " Health and Longevity"
7. Warriar, P. K.; Nambiar, V. P. K; Ramankutty, C. and R. Vasudevan Nair, R. 1996. Indian medicinal plants: a compendium of 500 species Vol. 5.