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Content

EDITORIAL

New year, new beginning

V. B. Gupta 1

REVIEW ARTICLES

Herbal drugs in milieu of modern drugs

Nazma Inamdard, Shima Edalat, Vikram B. Kotwal, Sunita Pawar 2

Psidium guajava L: A review

J. V. Kamath, Nair Rahul, C. K. Ashok Kumar, S. Mohana Lakshmi 9

Aromatherapy: Short overview

Meenakshi Bharkatiya, Rajesh K. Nema, Kamal Singh Rathore, Sunita Panchawat 13

Traditional herbal remedies from the Vindhaya region of Madhya Pradesh in the treatment of viral hepatitis

Sumeet Dwivedi, Satyaendra Shrivastava, Darshan Dubey 17

RESEARCH ARTICLES

Comparative study on effect of natural and synthetic superdisintegrants in the formulation of fast dissolving tablets

Santanu Chakraborty, Madhusmriti Khandai, Satya Prakash Singh, Niranjana Ch. Patra 22

Pharmacognostical studies of *Neolamarckia cadamba* (roxb.) Bosser leaf

Divyakant Patel, Vimal Kumar 26

Antimicrobial activity of *Capparis zeylanica* Linn. roots

V. V. Chopade, A. N. Tankar, R.O. Ganjiwale, P. G. Yeole 28

Free radical scavenging activity of aqueous extract of roots of *Baliospermum montanum* Muell-Arg

Prajakta V. Desai, Raju R. Wadekar, Girish H. Kedar, Kalpana S. Patil 31

Antimicrobial and antitumor activity of the fractionated extracts of *Kalimusli* (*Curculigo orchoides*)

Rajesh Singh, A.K. Gupta 34

Characterization and evaluation of natural copal gum-resin as film forming material

Milind J. Umekar, Pramod G. Yeole 37

Anti-oxidant activity of ethyl acetate extract of *Aquilaria agallocha* on nitrite-induced methemoglobin formation

P. B. Miniyar, T. S. Chitre, S. S. Karve, H. J. Deuskar, K. S. Jain 43

Effect of *Baliospermum montanum* root extract on phagocytosis by human neutrophils

Raju Ratan Wadekar, Sagar Vijay Agrawal, Kunal Mahesh Tewari, Rohan Dilip Shinde, Shirin Mate, Kalpana Patil 46

Effects of ethanol extract of *Pisonia aculeata* Linn. on ehrlich ascites carcinoma tumor bearing mice

Raju Senthilkumar, Rangasamy Manivannan, Ayyasamy Balasubramaniam, Thangavel Sivakumar and Balasubramanian Rajkapoor 50

Hemostatic activity of the leaves of *Tridax procumbens* Linn

Mayura A. Kale, Sadhana R. Shahi, Vijay G. Somani, Prashant B. Shamkuwar, A. S. Dhake 54

Traditional herbal remedies from the Vindhaya region of Madhya Pradesh in the treatment of viral hepatitis

Sumeet Dwivedi, Satyaendra Shrivastava, Darshan Dubey

Smriti College of Pharmaceutical Education, 4/1 Pipliya Kumar Kakad, Indore, Madhya Pradesh, India

India is a repository of herbal medicines, and there are evidences of herbs being used in the treatment of diseases and for revitalizing various body systems in almost all ancient civilizations. Plants have traditionally served as man's most important weapon against pathogens. Herbal medicines are widely used by all sections of the community, either as folk remedies or as medicaments in the indigenous as well as modern system of medicine. The present survey was conducted to record the medicinal herbs that tribes use for the treatment of viral hepatitis. Data were collected by interviewing local traditional therapists and tribes of the region. A total of 14 medicinal plants were obtained. Information on local names, plant parts, chemical constituents and dosage used were also recorded and reported in this paper. The present study aims to draw the attention of researchers towards the need of future critical study.

Key words: Traditional herbal medicine, tribes, folk remedies, viral hepatitis, Vindhaya region, Madhya Pradesh

INTRODUCTION

India is sitting on a gold mine of well-recorded and traditionally well-practiced knowledge of herbal medicine. Recently, considerable attention has been paid to utilizing ecofriendly and biofriendly plant-based products for the prevention and cure of different human diseases (Dubey *et al.*, 2004). The use of herbal medicine in the treatment of liver disorder has been in tradition from long back. The first literature to have reported on it was *Charaka Samhita* in 600 BC. The importance of herbal medicine in the treatment of liver disorder can be traced back to 2100 BC. Expansions of herbal drugs are stimulated by the growing interest in understanding the causes of frequently encountered hepatitis. Viral hepatitis is the inflammation of the liver, usually due to the attack of some virus (Flora *et al.*, 1996). Hepatitis can be caused by alcohol, chemicals and by many different viruses; most of the infection is caused by one of the five viruses, viz. A, B, C, D and E. It is well known that hepatitis can be spread through hypodermic needles, blood infusions, and through cuts and scratches, but almost half of the infected patients usually do not know the source of infection (Pengelly, 1995). Hepatitis A and C often produce very mild symptoms and may go unnoticed, whereas B and E are most likely to produce more severe symptoms. Occasionally, especially with hepatitis B infection, an affected person develops joint pain and itchy red hives on the skin. After a few

days, urine become dark yellow and jaundice (a yellowish discoloration of the skin and the whites of the eyes) may develop. Both these symptoms occur because bilirubin levels rise in the blood. The long duration between infection and illness represents an opportunity for the individual to seek alternative or complementary treatments. By making change in diet chart and life style, there will be enhancement in liver performance and overall health status of the patient (Frawley *et al.*, 1986).

Diseases can be diagnosed on the basis of the patient's symptoms, and results of a liver function test may indicate that liver is inflamed either by alcohol abuse or due to virus. Till date no vaccines are available against hepatitis C, D and E (Biswas *et al.*, 1990). The present work was undertaken to explore the herbal medicine available from the Vindhaya region of Madhya Pradesh used in the treatment of viral hepatitis and to provide information that will be useful to phytochemists and pharmacologists for further exploration.

STUDY AREA

Madhya Pradesh means *Central Province*. Geographically, it is located at the heart of India (Fig. 1). The forest area of the state is 95,221 km², constituting 31% of the geographical area of the state and 12.44% of the forest area of the country (Fig. 2). The Vindhaya region of Madhya Pradesh mainly comprises Rewa, Sidhi, Satna, Shahdol and Umaria; the Rewa district is taken into consideration while carrying out the present work. Investigations were carried out in

For correspondence: Dwivedi Sumeet, Smriti College of Pharmaceutical Education, 4/1 Pipliya Kumar Kakad, Indore, Madhya Pradesh, India.
E-mail: sumeet_dwivedi2002@yahoo.com

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Figure 1: Location map of Madhya Pradesh in India

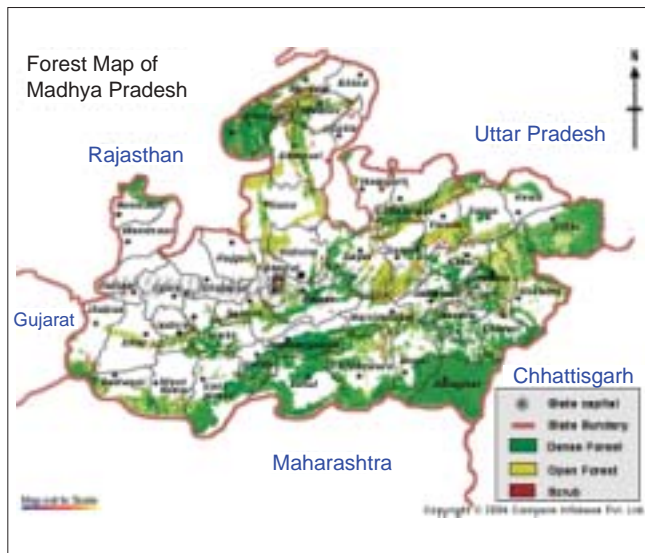


Figure 2: Forest map of Madhya Pradesh

different remote places scattered over five development blocks (Rewa, Teonthar, Sirmour, Jawa and Hanumana) in the Rewa district, and these study sites were chosen on the basis of flora population of the region (Table 1).

METHODOLOGY

An ethnobotanical survey of different remote places scattered over five development blocks was made from August 2005 to February 2006 to record the medicinal plants used by the tribes and rural population for the treatment of viral hepatitis. During the course of present investigation, systematic field trips were made to all the sites frequently after making proper planning. Before launching into the survey and fieldwork, discussions were held between the researchers and local therapists at different centers. The local informants selected were:

1. Tribal and non-tribal
2. Vaidhays, Hakims, Ojhas, Gunias, Saperas, etc.
3. Men and women working in village market, temples, church, masjid and other common places
4. Men and women working in the fields
5. Specialists in the field of herbal medicines

On the basis of our field survey amongst the tribal and non-tribal villagers, we identified 14 plants that were

used medicinally for the treatment of viral hepatitis. The plants were collected with the help of floristic literature (Oomanchanl, 1996), and their herbarium was prepared as per standard protocol as described by Varghese (1996) and Dwivedi (1992). The plant species were identified by Prof. Dr. S. N. Dwivedi, Department of Botany, Janta PG College, Rewa. Scientific information regarding these species was then obtained from the libraries at Janta PG College and Smriti College of Pharmaceutical Education, Indore.

SPECIES ENUMERATION

For each species, botanical name, family, local name (LN), mode of preparation and uses are provided here for further reference:

1. *Azadirachta indica* Juss.; family Meliaceae; LN Neem: 25 g powder of bark/leaves is added to buttermilk or juice and taken daily for a week to cure the disease.
2. *Boerhaavia diffusa* Linn.; family Nyctaginaceae; LN Punarnaba: 100 g of fruit pulp infusion is made and 100 ml of it is taken every morning with empty stomach till the disease is cured.
3. *Allium cepa* Linn.; family Liliaceae; LN Pyaj: 50 g bulb of onion cooked with vinegar and given once a day for 3 days seems to improve patient's condition.

Table 1: Geographical situation, population and population density of study sites

Development block	Area (sq. km.)	Total population	Population density (per sq. km.)
Rewa	704.2	1,68,049	434
Teonthar	796.9	1,45,267	206
Sirmour	913.2	1,78,140	222
Jawa	787.9	1,43,662	183
Hanumana	960.7	1,52,732	171

4. *Justicia adhotoda* Linn.; family Acanthaceae; LN Adusa: 100 g powder of its leaves mixed with leaf powder of *Plumbago zeylanica* and given along with milk to cure the disease.
5. *Cassia fistula* Linn.; family Caesalpinieae; LN Amaltas: decoction of 25 g of fruit pulp is given twice a day up to 2 weeks to cure hepatitis.
6. *Emblica Officinalis* Gaertn.; family Euphorbiaceae; LN Amala: 50 g powdered drug is given thrice a day with milk to treat hepatitis.
7. *Phyllanthus niruri* Linn.; family Euphorbiaceae; LN Bhuamla: decoction of 100 g fruits is given once a day with milk to treat disease.
8. *Sphaeranthus indicus* Linn.; family Asteraceae; LN Mudi: 50 g powdered drug given once a day with water to cure disease.
9. *Terminalia bellerica* Roxb.; family Comberataceae; LN Bahera: 50 g powdered drug of dried fruit is recommended twice a day till the cure of disease.
10. *Tinospora cordifolia* Willd.; family Menispermaceae; LN Giloya: 50 g powdered drug twice a day with water is recommended for 3-4 weeks.
11. *Asteracantha longifolia* Nees.; family Acanthaceae; LN Gokhulakanta: decoction of 60 g root is boiled in half

liter of water for 20-30 min and 60 ml is given three times a day till cure of disease.

12. *Aloe barbadensis* Linn.; family Liliaceae; LN Ghee kanvar: 50 g pulp of one leaf administered with black salt and ginger every morning for 10 days can cure the disease.
13. *Berberis vulgaris* Linn.; family Berberidaceae; LN Ambarbaris: fluid extract of bark 2-4 g is taken twice a day for 15 days.
14. *Picrorhiza kurroa* Linn.; family Scrophulariaceae; LN Kutki: 1-2 teaspoon full powder of rhizome taken along with hot water twice daily helps cure the disease.

CONCLUSION

In the present paper, 14 herbal medicines used for the treatment of viral hepatitis by the tribal and non-tribal people of the Vindhaya region of Madhya Pradesh have been reported (Fig. 3). The names of the plants along with their biological source, description, plant parts and chemical constituents are presented in Table 2. The major resource of traditional medicine is nature; these medicinal plants are subjected to various processes and are then administered to the patients. In recent years, ethnomedicinal studies

Table 2: Herbs used by tribes for treatment of viral hepatitis from the Vindhaya region

S.No.	Species biological source	Part used	Constituents	Description	Source of information
1	<i>Azadirachta indica</i> Juss.	Bark/leaves	Essential oils, nimbin, nimbinin, azadirachtin	Large evergreen tree, up to 100 feet tall	T
2	<i>Boerhaavia diffusa</i> Linn.	Fruit pulp	Boerrhavic acid	Creeping and spreading perennial herb and an excellent herb for the treatment of disease	NT
3	<i>Allium cepa</i> Linn.	Bulb	Allin	Biennial and perennial herb	H
4	<i>Justicia adhotoda</i> Linn.	Leaves	Vasicine, vasicinol, vasicinone and adhatonine	Evergreen stiff perennial shrub, 1-6 mm in height and well known in traditional system of medicines	H
5	<i>Cassia fistula</i> Linn.	Fruit pulp	Anthraquinones glycosides	A medium-sized deciduous tree, 6-9 m tall with a straight trunk	T
6	<i>Emblica Officinalis</i> Gaertn.	Fruits	Tannins	Small or middle-sized tree, used as ingredient in medicines in India	V
7	<i>Phyllanthus niruri</i> Linn.	Fruits	Tannins	Small shrub, having effective medicinal value	O
8	<i>Sphaeranthus indicus</i> Linn.	Whole plant	Essential oils, sphareanthine	Aromatic herb with spreading glandular hairy stem and branches with purple or pink flowers	V
9	<i>Terminalia bellerica</i> Roxb.	Fruits	Tannins	Large tree often with buttress; fruits of tree constitute drug Bahera	H
10	<i>Tinospora cordifolia</i> Wild.	Stem	Furane diterpines, columbin, berberin	Creeping herb with the woody stem having excellent medicinal value	NT
11	<i>Asteracantha longifolin</i> Nees.	Leaves/roots	Essential oils	Stout, rough, thorny, slightly tall annual herb and plant is used medicinally	T
12	<i>Aloe barbadensis</i> Linn.	Leaves	Aloin	Erect plant 30-150 cm in height; the bitter juice of leaves is used as medicine	V
13	<i>Berberis vulgaris</i> Linn.	Bark	Berberine, berbamine	Erect, thorny shrub with dark brown and yellow wood	O
14	<i>Picrorhiza kurroa</i> Linn.	Rhizomes	Bitter glycosides- kutikol, kuttokoside	Small hairy perennial herb with woody rhizome	NT

T - tribal; NT- non-tribal; V- vaidhays, O- ojhas, H- hakims

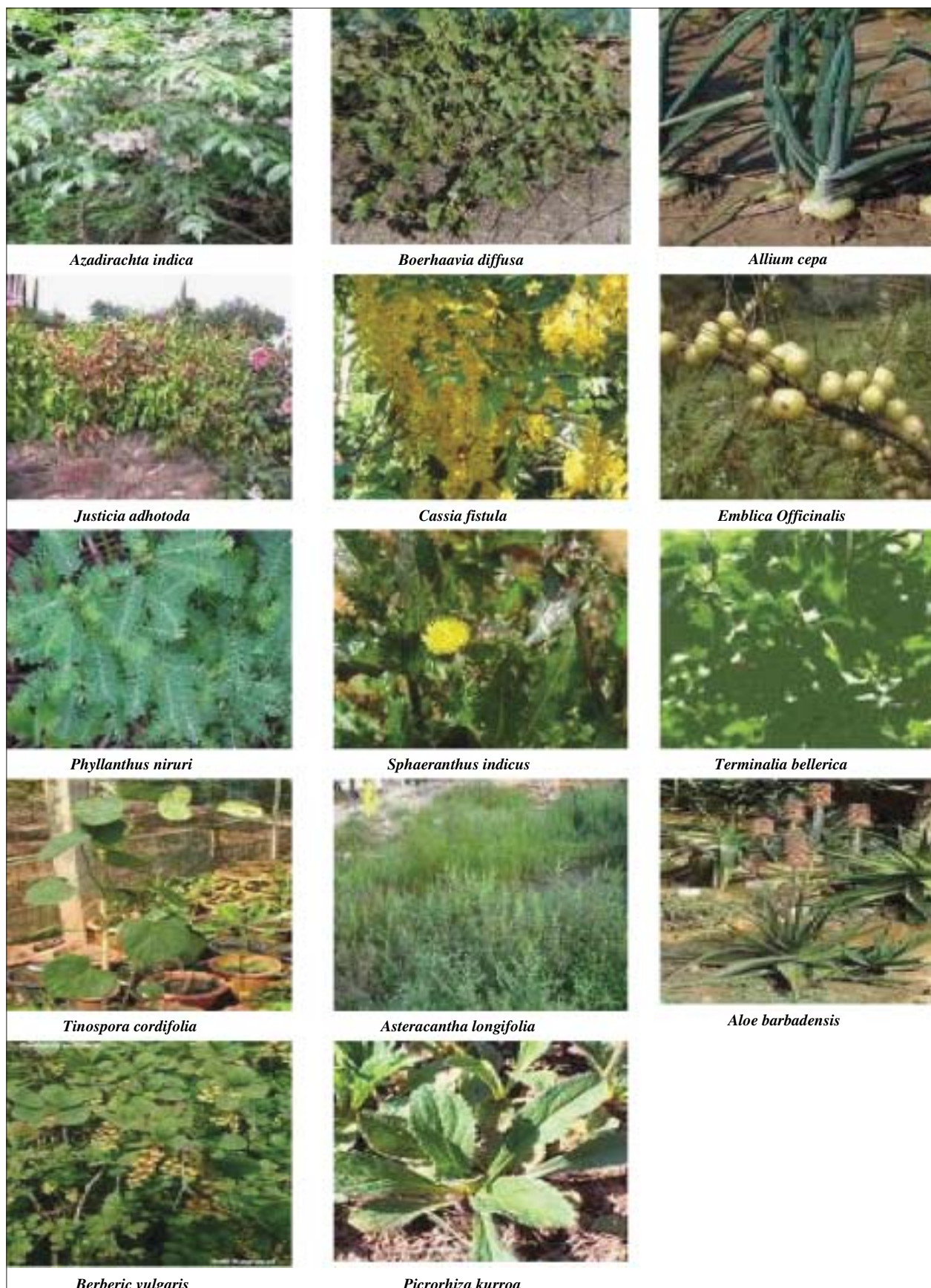


Figure 3: Photographs of plants for the treatment of viral hepatitis from the Vindhaya region

received much attention as this brings to light the numerous known and unknown virtues especially of plant origin.

After investigations, the authors conclude that medicinal herbs are going to play a very important role in helping those frustrated by the modern allopathic medicines and suffering from its grave side effects, which is why tribes and rural peoples are looking back to nature for safety and security. Herbal medicines are cheaper, easily available and their method of preparation is also simple. There is no risk of any major side effects, and above all it suits the social and culture needs of peoples. *Sphaeranthus indicus* is an excellent drug of choice for the treatment of the viral hepatitis. Its alkaloid, Sphaeranthine, is responsible for its medicinal value. Aqueous extract of massive roots of plant at a dose of 2 ml/kg exhibited marked protection of various enzymes, viz. serum glutamic oxaloacetic transaminase (SGOT) and serum glutamic pyruvic transaminase (SGPT), in serum bilirubin against peptic injury in rats, showing antiviral effects (Biswas *et al.*, 1990). Further detailed investigation needs to be carried out to bring forth and document this rich treasure of herbal medicine before they get lost from vicinity. These medicines also deserve evaluation on modern scientific lines such as phytochemical analysis, biological screening, pharmacological investigation and clinical trials for exploring new lead compounds for treating the ailments faced by the mankind nowadays.

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