

Ethnomedicinal Uses of Some Plants in Treatment of Jaundice by Tribal Communities of Paschim Medinipur District, West Bengal, India

Sarkhel S*

*Department of Human Physiology with Community Health, Vidyasagar University, Paschim Medinipur-721102, West Bengal, India

Abstract

To investigate the ethnomedicines used in treatment of jaundice by tribal communities in Paschim Medinipur district, West Bengal. An ethnomedicinal study was conducted in twelve villages of Paschim Medinipur district, West Bengal during 2013-2014 to collect information from traditional health healers/tribal communities on the use of medicinal plants for treatment of jaundice by the tribal community of Paschim Medinipur district, West Bengal. This paper provides ethnomedicinal information on the plants used to treat jaundice by three important indigenous communities of Paschim Medinipur district - *Santhals, Mundas and Lodhas*. The traditional knowledge of the studied indigenous communities on herbal preparations used for treating jaundice was collected through structured questionnaire and personal interviews. The present study enumerates 12 species of plants belonging to 12 families used by the tribal communities and medicinal healers of Paschim Medinipur district, West Bengal in treatment of jaundice. Each plant species has been listed alphabetically according to its botanical name, family, vernacular name, part(s) used, mode of preparation/administration. The importance of traditional medicinal system among the tribal communities of Paschim Medinipur district of West Bengal has been highlighted in the present study.

Keywords: Ethnomedicine; Medicinal plants; Jaundice; Paschim medinipur

Introduction

Liver diseases are some of the major causes of morbidity and mortality across the world. According to the WHO estimates [1], about 1.4 million cases of hepatitis A occur annually and 2 billion people worldwide are infected with the hepatitis B virus. In spite of tremendous advances made in allopathic medical practices, herbs still play an important role in the management of various liver diseases. A large number of plants and formulations have been claimed to have hepatoprotective activity. Jaundice is the most common of all liver disorders. Jaundice is a symptom and not a disease. Jaundice is indicative of the malfunctioning of the liver. Jaundice is characterized by the yellowish staining of skin and sclera that is caused by high levels of bilirubin in blood. Jaundice may result from various diseases or conditions that affect the liver including Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis D, Autoimmune hepatitis, liver cirrhosis, liver cancer, haemolytic anemia and malaria [2]. Traditional healthcare practices of indigenous people pertaining to human health are termed as ethnomedicine. In India, about 2,500 plant species belonging to more than 1000 genera are being used in indigenous systems of medicine. Plants and plant-based medicaments are the basis of many of the modern pharmaceuticals we use today for our various ailments [3]. Much of this wealth of knowledge is totally becoming lost as traditional culture is gradually disappearing. A large number of plants and formulations have been claimed to have hepatoprotective activity. Nearly 160 phytoconstituents from 101 plants have been claimed to possess liver protecting activity [4]. The present study is an attempt to integrate the traditional ethnomedicinal knowledge of the tribal communities and traditional healers of Paschim Medinipur district, West Bengal pertaining to treatment of jaundice (Figures 1-4).

Methods & Materials

Ethnobotanical data was collected through individual and Focus Group Discussion (FGD) interviews using semistructured open-ended questionnaires as proposed in standard literature [5]. Subjects

were selected on the basis of their knowledge pertaining to the use of medicinal plants in tradition [6]. Ethnomedicinal information was

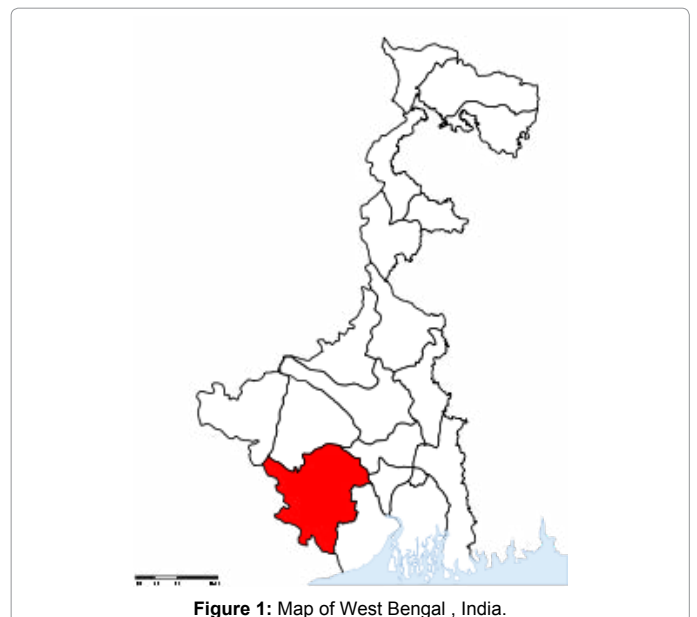


Figure 1: Map of West Bengal, India.

*Corresponding author: Sarkhel S, Assistant Professor, Department of Human Physiology with Community Health, Vidyasagar University, Paschim Medinipur-721102, West Bengal, India, Tel: 9051123367; E-mail: sumana.sarkhel@yahoo.in

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Figure 2: Paschim Medinipur district, West Bengal.



Figure 3: Interview with medicineman

obtained through a series of interviews with traditional healers, who still practiced their indigenous system of medicine. A questionnaire was prepared which included the vernacular names, methods of preparation, route of administration, part(s) used, dosage, duration and restriction on consumption of food. After collecting the specimens, we showed these fresh specimens to the local people in their houses and farms. Random sampling techniques were employed to identify

potential participants and interviewed a total of 85 people (40 men and 45 women). A total of 85 individuals (30-70 years) were interviewed during the survey including medicine men (Ojha), elder villagers, plant collectors and forest dwellers. There were herbalists, healers and plant traders among the interviewees as well. The same plant specimens were shown to different people to confirm the accuracy of the results. The interviews consisted of obtaining the information related to the identification of plants, their vernacular names, their medical uses and the preparation of remedies. Interview based field study and guided field work was done in which the taxonomic diversity, distribution, local names, parts of plants used in treatment of jaundice, preparatory methods and mode of administration of these plants were recorded. Group discussion was made with the healers to know their perception about the use of traditional folk medicines in jaundice and their awareness about the conservation of phytodiversity. Plant collection was carried out by standard method [7]. Herbaria were prepared according to conventional herbaria technique [8]. All the voucher specimens were identified using relevant floras and standard literature [9-12] and deposited in the herbarium of the Department of Botany and Forestry, Vidyasagar University, Paschim Medinipur, West Bengal. The collected plants were crosschecked by neighbouring herbalists and traditional medicinal healers. For each species the proportion of informants who independently reported the use of that particular plant in treatment of jaundice was assessed.

Results

Paschim Medinipur district is located in 21°36' to 22°57' North latitude to 86°33' to 88°11' East longitude and covers an area of 9345 square km. North and North west of this district is a part of Chotanagpur plateau. The area has a gentle slope from east to west. The flora of this region is constituted predominantly with *sal* of coppice origin and covers 60% of the average area. The usual associates of *sal* in this region are *Pterocarpus marsupium*, *Terminalia arjuna*, *Madhuca latifolia*, *Bombax ceiba*, *Terminalia bellerica*. Plantation mainly includes *Eucalyptus*, *Akashmoni*, *Bamboo* and *Kaju*. The tribal communities residing in this region are the *Santhals*, *Mundas*, *Lodhas*,



Figure 4: Medicines formulated in pelleted forms from plants materials.

Bhumijis, Oraon and Kherias. This region is characterized by sandy loam or loamy soil of reddish or reddish brown colour. The maximum temperature recorded in April is 45°-46°C and minimum temperature in winter is 6°C.

In the present study, 12 plant species from 12 families traditionally used in treatment of jaundice by the tribal community of Paschim Medinipur have been documented. The plants have been enumerated alphabetically according to their scientific name, habit, local name, family, parts used, mode of preparation and medicinal uses. Literature on the ethnomedicinal plants used to cure jaundice by various communities in India was extensively searched and reviewed. Among the reported plants there are various species of trees, shrubs and herbs. The local healers and tribal population mostly used fresh plant parts. Dried plant parts are used in powdered form. These medicinal plants are used as hepatoprotective agents and do not directly cure the disease. The local tribes mainly used leaf, root, bark, rhizome, stem, fruit, seed and latex of these plants as medicine for jaundice. The reported plants were mostly administered as decoction, extracts, paste, juice and poultice.

Enumeration of species

Achryanthes aspera L/ SS102 (Amaranthaceae) *Apang*: The root is crushed to powder and boiled in water. 2 glasses of root decoction is given in the morning daily.

Aloe vera (L) *Burm.f./* SS104(Xanthorrhoeaceae) *Gritakumari*: The leaf sap is mixed with *Curcuma longa* Linn rhizome paste and cow milk is taken daily for 10-12 days, twice a day.

Andrographis paniculata (Burm.f)Wal Ex.Nees /SS106 (Acanthaceae) *Kalmegh*: Leaves and young twigs are crushed to paste, 20-30 gms paste taken three times daily after meal for 2-3 weeks.

Azadiracta indica A *Juss/* SS108 (Meliaceae) *Nim*: The bark is crushed to powder and boiled in water, 5 ml extract is prescribed twice a day for two weeks.

Brassica nigra(Linn.) *Koch* (Brassicaceae) *Rai*: Massage the seed oil on hands and feet thrice daily for 2-3 weeks.

Centella asiatica(L.)Urban /SS113 (Mackinlayaceae) *Thankuni*: The leaf extract is mixed with *Daucus carota* Linn root juice (5-10 ml) and is taken orally.

Cynodon dactylon(L)Pers /SS121 (Poaceae) *Durba*: The juice of leaves are orally given.

Eupatorium tripliverve Vahl/herb/SS122 (Asteraceae) *Apayan*: Leaf extract is taken with gur.

Ocimum tenuiflorum L. /SS136 (Laminaceae) *Tulasi*: The extract of the whole plant is taken for 3-4 weeks with cow milk.

Phyllanthus fraternus G. L.Webster /SS137 (Euphorbiaceae) *Bhui amla*: Ripened fruits are eaten daily for 10-15 days.

Mentha spicata Linn emend.Nathh. /SS414 (Laminaceae)*Pudina*: Powdered dry leaves are eaten with chilli powder for 10-15 days.

Tinospora cordifolia(Thumb). *Miers* (Menispermaceae) *Guduchi, Gulanchi*: Pieces of stems are soaked in water, this water is taken in the morning with honey.

Discussion

In the present study, 12 medicinal plants commonly used in

treatment of jaundice in *Paschim Medinipur* have been documented. *Paschim Medinipur* is inhabited by a number of tribal communities like *Santhals, Mundas, Lodhas, Bhumijis, Oraon and Kherias.* The use of medicinal plants was a chosen practice in this district throughout history, the knowledge of which was gathered through the experience of many generations. The reported plants were used by more than one ethnic group. The local tribes mainly used leaf, root, bark, rhizome, stem, fruit, seed and latex of these plants. There was a consensus among users indicates that plants have curative effect in treatment of jaundice. Jaundice is not a disease. It is a symptom originating from liver disorders and there may be many different causes for jaundice. But all the interviewed traditional healers identified jaundice according to the symptoms regardless of the cause of the disease. The symptoms used to identify jaundice were extreme weakness, headache, fever, loss of appetite, severe constipation, nausea, yellow discoloration of the eyes, tongue, skin, and urine, dull pain in the liver region and intense itching.

There are various reports of plants being used in treatment of jaundice. *Boerhavia diffusa* L. root have shown hepatoprotective property against thioacetamide induced hepatotoxicity in Wister albino rats [13]. Ursolic acids is a common triterpenic acid found in *Solanum incanum* L. Ursolic acids have been reported to have hepatoprotective activity against carbon tetrachloride, ethanol, thiacetamide and galactosamine damaged liver in rats [14] and used for remedies from jaundice. Aqueous leaf extract of *Andrographis paniculata* (Burm. f.) Nees. has shown hepatoprotective activity against hexachlorocyclohexane induced hepatotoxicity in Swiss albino rats [15]. *Andrographis paniculata* (Burm. f.) Nees. has andrographolide and neoandrographolide [16], which are well known hepatoprotective agents. The root bark of *Calotropis procera* R.Br has been reported in treatment of jaundice by the tribal of Western Madhya Pradesh [17]. The fresh juice of leaves of *Aegle marmelos* Linn has been reported to be used in treatment of jaundice by the Awadhi tribes of Nasik district [18,19].

Conclusion

Use of medicinal plants as a source of drugs to cure various diseases is as old as humankind itself. Even to the present day, medicinal plants are available as cheap and accessible source of drug for most of developing and also in developed countries. In India, more than 43% of the total flowering plants are reported to be of medicinal importance [19]. The ethno-medico-botanical survey of the villages of Paschim Medinipur district revealed that the people of this area are possessing good knowledge of herbal drugs but, as these ethnic societies are in progressive exposure to modernization; their knowledge of traditional uses of plants may be lost in due course. Plant drugs and herbal formulations are frequently considered to be less toxic and free from side effects than synthetic ones. In general, there is very little biological knowledge on the specific modes of action in the treatment of jaundice, but most of the plants have been found to contain substances like glycosides, alkaloids, terpenoids, flavonoids etc. that are frequently implicated in treatment of this diseases. This knowledge needs to be inventorised and research related to isolation and purification of active compounds from these plants should be carried out to provide leads in future drug therapy.

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