

Clerodendrum Infortunatum L. – A Plant Used for Treatment of Hepatitis B and Hepatic Disorders in Jamalpur District, Bangladesh

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Received: 29 Sep 2019

Accepted: 22 Oct 2019

Published: 26 Oct 2019

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1. Abstract

Hepatitis B and other hepatic disorders are prevalent in Bangladesh. Although the Government has undertaken a successful vaccination of the people against hepatitis B infections, yet there remain people like truck drivers, drug addicts, people engaged in sexual activities with multiple sex partners and sections of the rural population who have a high prevalence of hepatitis B. There also are segments of the population, who either due to ignorance or other factors like fear of vaccines remain to be vaccinated. A number of these people visit Folk Medicinal Practitioners (FMPs) and claim to get cured. The objective of this study was to review one such plant, namely *Clerodendrum infortunatum* used by a FMP in Ramnagar village in Jamalpur district, Bangladesh to cure hepatitis B infected patients.

2. Keywords: Hepatitis B; *Clerodendrum infortunatum*; Jamalpur; Bangladesh; Folk medicinal practitioner

3. Introduction

Hepatitis means inflammation of the liver. Hepatitis B is caused by Hepatitis B virus (HBV) and is a serious problem worldwide. Chronic infection with the virus can lead to cirrhosis and hepatocellular carcinoma. According to the World Health Organization (WHO) over 2000 million people alive today have been infected with HBV at some time and 350 million remain carriers of the virus [1]. HBV is transmitted through contact with infected blood, body fluid, and sexual intercourse with an infected person. Once a person has contracted HBV, several medications are available like Entecavir, Tenofovirafenamide, and Tenofovir dipovoxil fumarate, but the medications have adverse side effects [2]. They are also costly and the poorer segments of the Bangladesh people comprising about a third of the total population cannot afford these drugs. As such, although HBV is

prevalent in Bangladesh [3], a number of the infected patients seek alternate modes of treatment rather than treatment with allopathic drugs.

Folk Medicine (FM), practiced by Folk Medicinal Practitioners (FMPs) is one of the oldest forms of traditional medicinal practices in Bangladesh and has been in vogue for possibly thousands of years. The major form of treatment by FMPs is with medicinal plants. FMPs treat a huge variety of diseases; however, to a considerable extent, the mode of diagnosis of diseases like cancer or hypertension or viral diseases remain unknown [4-6]. Some FMPs depend on initial allopathic diagnosis followed by their phytotherapeutic treatment; others would classify say all liver diseases in two or three broad categories (the first category being jaundice) and treat accordingly.

It is obvious that treatment of HBV infection needs new

allopathic drugs with less or no side-effects. To discover a new allopathic drug starting from traditional medicinal practices, an excellent place to start is folk medicine or ethnomedicinal reports on any given plant. From that view point, we had been conducting ethnomedicinal/ethnobotanical surveys in Bangladesh for the last ten years [7-14]. The objective of this report was to investigate in detail the use of a plant *Clerodendrum infortunatum* L. by a FMP in Jamalpur district, Bangladesh for treatment of HBV.

4. Methods

Preliminary information on the plant was obtained from a FMP practicing in Ramnagar village of Jamalpur district, Bangladesh (**Figure 1**). Prior Informed Consent was obtained from the FMP to disseminate any information obtained from him. Plant specimen as shown by the FMP was photographed and a voucher specimen brought to Dhaka to be identified by a competent botanist at the University of Development Alternative (UODA). A voucher specimen of the plant was deposited at the Medicinal Plant Collection Wing of UODA.

5. Results

The plant used by the FMP for treatment of hepatitis B viral infection was identified as *Clerodendrum infortunatum* L. (Lamiaceae/Verbenaceae family), known in English as hill glory bower and locally as 'vatia' (**Figure 2**). It is a perennial shrub and is commonly found in Bangladesh by roadsides where it forms a dense bush. Its flowering time is March-April.

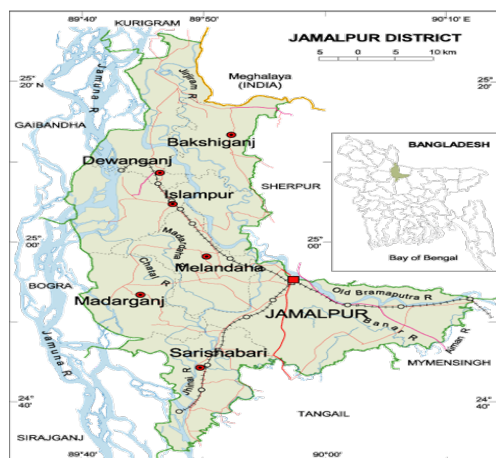


Figure 1: Map of Jamalpur district (inset: map of Bangladesh showing Jamalpur district in grey).



Figure 2: *Clerodendrum infortunatum*

The FMP used shoot tips of the plant to treat hepatic disorders including hepatitis B viral infections, wound healing, skin diseases, fever, joint pains and intestinal worms. Shoot tips were grounded in water to make paste. Small spherical balls made from the paste were dried under the sun and orally taken. The number of balls to be taken depended on the severity of the infection, but in most cases two balls were taken once daily.

6. Discussion

The hepatoprotective potential of methanol extract of the plant against carbon tetrachloride-induced hepatotoxicity in rats has been reported [15]. The plant is known to contain acteoside [16]. Acteoside is a known anti-viral agent; it acts through stimulating interferon- γ production [17], although it remains to be determined whether the compound is active against HBV.

7. Conclusion

The existing scientific reports suggest that the plant can be a source of anti-viral agents like acteoside as well as other compounds with potential therapeutic efficacy against HBV. However, more scientific studies are necessary towards any discovery of new drugs.

8. Acknowledgement

The authors are grateful to the FMP for providing information on the plant.

9. Conflict of Interest

The authors declare that there are no conflicts of interest.

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