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A critical interpretation over *Bhumyamlaki* (A medicinal plant): A brief review study

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Abstract
Nowadays, there is a great deal of interest in the Ayurvedic method of medicine and hence the market for various medicinal plants in the manufacture of Ayurvedic medicines is growing. In the commercial markets, there is a lot of adulteration or replacement because of the various geographical areas where these plants grow. Plant drug histological studies are important not only for studying adulterants, but also for accurate identification. The plant is bitter, astringent, refreshing, diuretic, antiseptic and fungal. It is used for Hepatoprotective, antitumor, antidiabetic, antihypertensive, analgesic, anti-inflammatory, and antimicrobial properties in indigenous systems of medicine such as Ayurveda, siddha, unani, and homoeopathy. Dropsy, jaundice, diarrhea, dysentery, intermittent fevers, urino-genital system infections, scabies, ulcers, burns, and the common cold are all handled with the herb. It has potent antiviral effects against the hepatitis B virus. It has anti-nociceptive and anti-inflammatory effects, as well as anti-diabetic and antilipidemic properties.

Keywords: *Bhumyamlaki*, pharamcognosy, *Phyllanthus etc*

Introduction
The plant is bitter, astringent, cooling, diuretic, stomach, febrifuge and antiseptic. It is common in indigenous medicines such as Ayurveda, Siddha, Unani and Homoeopathy and is used for its Hepatoprotective, antitumor, antidiabetic, antihypertensive, analgesic, anti-inflammatory and antimicrobial properties [1]. The herb is also used for dropsy, jaundice, diarrhea, dysentery, intermittent fever, urinary-genital conditions, scabies, ulcers, wounds and cold. Bhuyamlaki leaf paste is spread over the skin to cure diseases of the skin. The paste of the entire plant of Phyllanthus nirui is spread with rock salt over the region caused by discomfort, swelling in case of fracture [2]. The root of the plant is made into a paste when rubbed with lime juice or rice gruel and applied as a paste. Diabetic neuropathy is a relatively early and common complication affecting approximately 30% of diabetic patients. While the discovery of insulin and hypoglycemic has given a tremendous benefit to diabetics, these people may not have the best cure for their neuropathic complications [3]. The medications that are widely used are mainly for symptom treatment, although they also have certain side effects. It is also important to investigate the possibility for safer and more efficient treatment from other sources. Phyllanthus niruri) is a plant that has been identified as a Pitta and Kapha reducing plant, which means it can help to balance these two Doshas. Symptoms such as Suptata (numbness) and Daha (burning sensation) in body parts, especially the hands and feet, are identified as Purvarupa of Prameha in Ayurvedic classics [4]. Daha is also mentioned in Prameha's Upadravas (complications). Diabetic neuropathy is characterized by these signs.

Habit and Habitat
The leaves have an elliptical oblong to obviate height of 3.0-11.0x1.5-6.0 mm. The height of the elliptical oblong leaves is from 10 to 60 cm.[5] They are erect and treaded stem, rugged younger parts, leaf 3.0-11.0 x1,5-6.0 mm. Axillary flowers have unisexual 1-3 male flowers in the first 2-3 axils and bisexual in the succeeding axils. Male flowers: pedicel 1 mm long, calyx 5, oblong, elliptic, apex acute, hyaline with unbranched mid rib; disc segments 5, rounded, stamens 3, filaments connate; disc segments 5, rounded, stamens 3, filaments connate; disc segments 5, rounded, stamens 3, filaments connate; disc segments 5, rounded, stamens 3, filaments connate; disc segments 5, (Bagchi *et al*., 1992) [6].

Aim and Objectives
Aim: To study the effects of *Bhumyamalaki* in the different Condition.

Objectives: To observe the safety of the *Bhumyamalaki*.

Method and Materials
Bhumyamalaki materials, authentic websites (PubMed, medicinal plants, etc.), Authentic Magazines, Literature, Manuscripts, Sanskrit dictionary, Shabdakosha, etc., have been compiled from various publications and journals, Ayurvedic and modern texts.

Bhumyamalaki
Phyllanthus amarus Schum and Thonn's new vegetable materials. Web Phyllanthus. Linn Phyllanthus maderaspatensis. Phyllanthus simplex, Phyllanthus simplex, and Linn Urinaria. The collected samples of vouchers were put in the Department of Pharmaceutical Sciences, Guru Jambheshwar University, Hisar and Haryana, and collected from the foothills of Western Ghats, India [7]. The shadow was dried from both samples. The epidermis of the leafs is first prepared for the study of the epidermal structural tests for the dry leaves. On both the upper and lower epidermis of

the dry leaves, a domestic adhesive (Quick fix) was applied uniformly. After that, it's dried at room temperature. The dried transparent film of "Quick fix" is then carefully peeled away from the leaf's surface and placed on a clean, dry glass slide with the imprint surface facing up. Cover slip is placed over it and lightly tapped to flatten the film. A compound microscope is then used to analyze it. A mirror-type camera lucida was used to create line drawings. The World Health Assembly has stressed the importance of using existing monitoring methods and applying appropriate criteria to ensure the safety of medicinal plant products in resolutions [8]. For quality control of herbal medicines, traditional Pharmacognostical trials are generally appropriate. To develop standards for single drugs and compound preparations in order to validate the genuineness of crude drugs of plant, mineral, and animal origin, Pharmacognostical standardization of herbal drugs includes macroscopic, microscopic, physio-chemical constants, and fluorescence analysis of investigated parts, as well as to evolve standards for single drugs and compound preparations. The macroscopic and microscopic analysis of a medicinal plant, according to WHO (1998), is the first step toward determining its classification and purity and should be done before any experiments are performed. Phyllanthus niruri Lin, a member of the Euphorbiaceae family, is responsible for the plant drug "Bhumyamalaki," which is one of the promising herbal drugs used in Indian system of medicine for various liver disorders [9]. P. niruri is only found in the West Indies and not in India. P. amarus Schum and Thonn, P. fraternus Web. P. maderaspatensis Linn. P. simplex Retz. P. urinaria Linn. Are among the Phyllanthus species known as "Bhumyamalaki. It's also been used to relieve skin ulcers, sores, itching, and other illnesses. Phyllanthus concentrates on its ability to suppress viruses, especially the hepatitis B virus. According to studies, Phyllanthus can inhibit the virus's growth and replication, as well as reduce the amount of hepatitis B virus in the bloodstream. It has not been confirmed to be successful in destroying viruses, but it has been shown to be effective in reducing symptoms as well as battling the hepatitis B virus. Phyllanthus can also help the liver's general health.

According to a review of the literature, only a few researchers have looked into the structural details of P. fraternus. The structural details of P. fraternus Web were studied by Saha and Krishna Murthy (1959). The leaf structural studies were later carried out by Yelene *et al*. Khatoon *et al*. looked at three different Phyllanthus species [10]. There has yet to be a published study that compares the microscopic diagnostic characters of all different species of Phyllanthus that are known to have Hepatoprotective properties. Plant drug histological studies are important not only for studying adulterants, but also for accurate identification.

Pharmacological Activities

Antioxidant activity

The Total Phenolic Content (TPC) and antioxidant activity of fresh and dried Phyllanthus amarus were calculated using the Folin- Ciocalteau technique, 2, 2-diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging activity, and Ferric Reducing Antioxidant Strength (FRAP) assays. Different drying methods substantially diminished the antioxidant properties of P. amarus Methanolic extracts, with microwave drying causing the greatest reduction in TPC and antioxidant function [11].

Anti-hepatotoxic activity

The concentration of triglycerides, cholesterol, and phospholipids in the liver, brain, kidney, and heart is reduced as a result of ethanol administration (Tripathi *et al*., 1992). In cattle, whole plant powder at doses of 35 and 70 mg kg-1. (Sane *et al*., 1995) [12].

Antiviral activity

P. amarus alcoholic, hexane, chloroform, butanol, and water extracts were examined *in vitro* on HbsAg, HBeAg, and HBV-DNA in serum samples positive for HBV antigen, followed by Elisa antigen screening. Against HBV antigen, the butanol extract was the most effective (Mehrotra *et al*., 1991). A single injection of an aqueous extract at a concentration of 1 mg mL-1 on human hepatocellular carcinoma derived cells. The secretion of HBsAg was halted for a total of 48 hours (Jayaram and Thyagarajan, 1996; Yeh *et al*., 1993). The polymerase activity, mRNA transcription, and replication of the Hepatitis B virus were all disrupted, meaning that Phyllanthus amarus could be used as an antiviral agent [13]. The polymerase activity, mRNA transcription, and replication of the Hepatitis B virus were all disrupted, meaning that Phyllanthus amarus could be used as an antiviral agent (Lee *et al*., 1996; Ott *et al*., 1997).

Anti-bacterial Activity

The antibacterial potency of extracts from the root and leaf was tested against ESBL-producing Escherichia coli collected from HIV-positive patients' stool samples using the Bauer disc diffusion method. Various doses of the extracts were susceptible to all HIV seropositive patients' strains (5, 10, 20, 40 and 80 mg mL-1). This indicates the extract's antibacterial capacity (Akinjogunla *et al*., 2010).

Hepatoprotective Activity

After a methanol extract of Phyllanthus amarus leaves, total cholesterol, AST, ALT, urea, uric acid, total protein, prostatic, alkaline, and acid phosphatases all decreased statistically substantially (p0.05 student's t-test) (50-800 mg kg-1). At 400 mg kg-1 P. amarus extract, uric acid had the greatest reduction effect, while total cholesterol had the least reduction effect. This effects' dosage and length were also important. This shows the hepatoprotective, nephroprotective, and cardioprotective properties of P. amarus leaves (Obianime and Uche, 2008).

Discussion

In addition, the plant is used to cure jaundice, diarrhoea, dysentery, intermittent fevers, urino-genital system infections, scabies, ulcers, burns, and the common cold. It has potent antiviral effects against the hepatitis B virus. It has anti-nociceptive and anti-inflammatory effects, as well as anti-diabetic and antilipidemic properties. As a result, the current analysis is an attempt to include a systematic review of the literature on its pharmacological, conventional, and phytochemical properties. Microscopic analysis of the Phyllanthus species showed that Phyllanthus amarus has both anisocytic and paracytic stomata, while P. fraternus and P. maderaspatensis only have anisocytic stomata. P. amarus and P. fraternus have wavy epidermal cell walls, while P. maderaspatensis has smooth epidermal cell walls.

All of the Phyllanthus species listed above are known in India as "Bhumyamalaki," and they are used to treat a number of liver disorders. However, the active constituents responsible for the treatment of liver diseases are not present in all Phyllanthus species [14].

Phyllanthus niruri Linn. is a mixture of five distinct species, including P. amarus Schum and Thonn, P. fraternus Web. P. maderaspatensis Linn, P. simplex Retz, and P. urinaria Linn. Phyllanthus niruri Linn. is a mixture of five distinct species, including P. amarus Schum and Thonn, P. fraternus P. niruri, listed in the flora of British India, and "Bhumyamalaki," mentioned in the classical literature, have recently been equated with P. amarus based on clinical efficacy. However, due to morphological similarity, all five varieties of Phyllanthus are sometimes mistaken and sold under the same vernacular name in herbal medicine markets around the world. Diagnostic characters for all five Phyllanthus species analyzed have been formed as a result of this research, which was performed using a very specific realistic methodology [15].

Conclusion

The current study's microscopic diagnostic characters will help in the detection of true Phyllanthus samples used in liver diseases using simple techniques. This is the first research of its kind on the comparative microscopic diagnostic characteristics of "Bhumyamalaki." The whole plant is used to treat a variety of diseases in India. The antioxidant potential of the extracts can be calculated using a number of *in vitro* assays. Extensive spectrum lactamase was used to assess the antibacterial effectiveness of root and leaf extracts. P. amarus, antitumor and anticancer activity can be demonstrated by the inhibition of metabolic regulation of carcinogens as well as the inhibition of cell cycle regulators.

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Conflict of Interest: Nil

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