Pharmacognostical and Chromatographic Studies on the Drug “Zarnab” A Cardic Remidy

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ABSTRACT

The dried leaf of Taxus baccata Linn. commonly known as Zarnab. Zarnab is an important medicinal drug of herbal origin in unani system of medicine. The plant possesses many medicinal properties and it is an important component of some marketed herbal formulations.

The main aspects included in the study are morphological characters, anatomical characters, powder analysis, physicochemical studies and thin layer chromatographic profile.

Keywords----- Taxus baccata, physico-chemical, anatomical, thin layer chromatography.

I. INTRODUCTION

The drug Zarnab consists of leaf of Taxus baccata L. (Family- Taxaceae). It is an evergreen conifer, about 6.5 m high, distributed in temperate himalayan region at altitudes between 1800-3300 m and in the hills of Meghalaya and Manipur at an altitude of 1500 m.1,2

The leaves have been used internally in the treatment of asthma, bronchitis, hiccup, indigestion, hysteria, rheumatism and epilepsy. Externally, the leaves have been used in a steam bath as a treatment for rheumatism. Leaves are reported to be used in traditional medicine as abortifacient, antimalarial, antiheumatic and for bronchitis, while dried leaves and barks were used against asthma. A homeopathic remedy is made from the young shoots and the berries. It is used in the treatment of many diseases including cystitis, eruptions, headaches, heart and kidney problems, rheumatism etc. In 1021, Avicenna, also known as Ibn Sina, introduced the medicinal use of Taxus baccata L for phytotherapy. He named this herbal drug as “Zarnab” and used it as a cardiac remedy.3,4,5,6,8

II. MATERIAL AND METHOD

The crude drug was procured from local market, New Delhi and identified by botanist using pharmacopoeial standards. The physico-chemical studies and TLC of the drug were carried out according to UPI.

III. OBSERVATION AND RESULTS

1. A. Macroscopical features

Leaves 2.5- 3.8 cm long, linear, flatted, acute, narrowed into a short petiole which is decurrent along, pale yellowish green or rusty red below.6 (Fig-1A, B)

B. Microscopical features

Leaf is bifacial and possesses the upper and lower epidermal layers. The upper epidermis is covered with thick cuticle. The cuticle is comparatively thin over the lower epidermis, which is perforated by sunken stomata. Below the upper epidermis is a two layered palisade tissue whose cells are elongated, parenchymatous and containing chloroplasts. Spongy parenchyma 3-5 layered, thin walled, oval or irregular in shape, containing reddish brown contents, vascular bundle single, present in the midrib within an endodermis (Fig-2; A-E).

C. Powder study

Greenish-brown powder shows fragments of parenchyma cells and very rarely xylem trachieds, polygonal epidermal cells with striated cuticle and few sunken stomata in surface view.

2. Chemical Analysis
Physico-chemical parameters:

Table-1

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Values</th>
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<tbody>
<tr>
<td>Alcohol soluble matter (%)</td>
<td>14.5, 14.5, 15.0</td>
</tr>
<tr>
<td>Water soluble matter (%)</td>
<td>22.5, 23.0, 23.0</td>
</tr>
<tr>
<td>Total ash (%)</td>
<td>3.94, 4.0, 4.21</td>
</tr>
<tr>
<td>Acid insoluble ash (%)</td>
<td>0.44, 0.52, 0.56</td>
</tr>
<tr>
<td>pH of 1% Aqueous solution</td>
<td>5.35, 5.38, 5.40</td>
</tr>
<tr>
<td>pH of 10% Aqueous solution</td>
<td>5.21, 5.22, 5.23</td>
</tr>
</tbody>
</table>

3. Thin Layer Chromatography

Five gm powdered drug was extracted in 40 ml of absolute alcohol under reflux on water bath for 15 min. Filtered and concentrated the filtrate up to 5 ml. The extract obtained was applied on a pre-coated silica gel plate and developed in Ethyl acetate: Methanol: Water (100: 13.50: 10) system in developing chamber. The plate was dried and sprayed with Anisaldehyde Sulphuric acid reagent and again the plate was dried and kept in an oven for heating at 105°C for 10 minutes, RF values of the spots are 0.04, 0.09, 0.19, 0.29, 0.73, 0.86, 0.92, 0.96. 7

IV. CONCLUSION

Authentication of drug by macroscopy, microscopy (Fig. 1, 2) along with physico-chemical parameters (table No. 1) followed by TLC demonstrates the genuineness and purity, that may helps ensuring the quality of other indigenous medicine as well.

V. ACKNOWLEDGEMENT

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Microscopical Features: Fig 2.

Fig 2A T.S. of ZARNAB Leaf 4 x

Fig 2B T.S. of Leaf margin 40 x

Fig 2C T.S. Showing upper surface 40 x

Fig 2D T. S. showing lower surface 40 x

Fig2E T.S. showing vascular bundle 40 x

REFERENCES