Therapeutic potential of *Thabasir* in Sri Lankan Indigenous Medicine: A scientific review

Shifra A.S.F.*, Fahamiya N., Shiffa M.S.M. and Rifna M.R.F.

Abstract

Thabasir (Bamboo salt) is a white silica exudation found in the internodes of stems of the female bamboo (*Bambusa arundinacea*). This concrete like crystalline is an opaque, white, irregular shaped, light, soft and brittle substance. It contains 90 % silica as a hydrate of silicic acid, peroxide of iron, potash, lime, aluminium and vegetable matter. Traditionally it has been used in various ailments such as hyperdipsia, diarrhoea, vomiting, heart diseases, cough, asthma, jaundice, fever, tuberculosis, bronchitis, leprosy, paralytic complaints, anaemia and as a general tonic in convalescents. Further, in recent years scientists have shown more interest in *Thabasir* due to its medicinal, nutritional and cosmetic values. However, up to now, no research studies have been carried out to prove its therapeutic effects scientifically, as mentioned in Unani medicine. Therefore, the information available in this review would help to do further research in this regard. Hence, this review aims to explore the information available in the literature regarding therapeutic potential of *Thabasir* in the field of indigenous medicine. All the available information on *Thabasir* was compiled from search engines of electronic databases such as Google scholar, PubMed, Medline, Scopus and classical texts. The literature search revealed that *Thabasir* possess pharmacological properties such as cardiac exhilarant, cardiac tonic, astringent, cooling, dessicant, febrifuge, general tonic, sexual tonic, tissue builder, aphrodisiac, spermopiotic, thirst quencher, hemostatic, expectorant, diuretic and general tonic. It can be concluded that *Thabasir* is a potential therapeutic agent in Sri Lankan indigenous medicine.

Keywords: *Bambusa arundinacea*; Bamboo salt; *Thabasir*; Therapeutic activity, Traditional medicine

Introduction

Man has continually investigated plants, animals and minerals in order to assess the importance of developing natural, sustainable and affordable drugs for treating various ailments. Among those three sources, the plants of tropical and subtropical origin have been found to have therapeutic potential and are being used since time immemorial. The beneficial therapeutic effects of these medicinal herbs are due to the chemical components present in them. As such, Bamboo is one of the precious plant resources of the earth which plays an important role in indigenous systems of medicine due to its rich nutritional, medicinal and cosmetic values. This review aimed to gather information available in the literature regarding the therapeutic potential of *Thabasir* in the field of indigenous medicine.

Methodology

All the available information on *Thabasir* was compiled from electronic databases of Google scholar, PubMed, Medline, Scopus and classical texts.

Results and Discussion

Scientific classification of Bamboo

Kingdom: Plantae
(unranked): Angiosperms
(unranked): Monocots
(unranked): Commelinids
Order: Poales
Family: Poaceae
Subfamily: Bambusoideae
Supertribe: Bambusodae[1]

Faculty of Indigenous Medicine, University of Colombo, Sri Lanka.

**Correspondence: Shifra A.S.F., Faculty of Indigenous Medicine, University of Colombo, Sri Lanka.*
Email: fathimashifra@fim.cmb.ac.lk

English Name: Bamboo salt; Tamil Name: *Moongil uppu;* Sinhala Name: *Una kapuru;* Tibbi Name: *Tabashir;* Arabic Name: *Tabashir;* Sanskrit Name: *Bansarochana, Vanshalochana, Vamsarocana, Bangsolochan*; Other synonyms: *Subha, Subhra, Tuga, Tugaksiri, Tvakaksiri, Vaisnavi, Vamsaja, Vamsaksiri, Vamsi* [2]

About half of these species grow in Asia, most of them within the Indo-Burmese region which includes 136 species under 23 genera which are available only in India[3]. Most of the bamboos grow in a warm climate, abundant moisture, and productive soil, although some do grow in reasonably cold weather about 20 °C. They grow in plains, hilly and high-altitude mountainous regions, and in most kinds of soils, except alkaline soils, desert, and marsh.

As sugar cane, corn and other grasses, bamboos comprise one of 12 subfamilies within the family Graminae (Poaceae) and they represent the only major grass lineage to diversify in forests. They are distinguished from the other members of the grass family by the presence of branches at each node and well-developed, asymmetrically strongly invaginated arm cells in the leaf mesophyll as seen in cross section and also generally exhibit relatively broad, pseudopetiolate leaf blades usually with fusoid cells flanking the vascular bundles and by the presence of branches at each node. Nearly 1,500 described species of bamboos are classified into three tribes: Arundinarieae (temperate woody bamboos, 546 species), Bambuseae (tropical woody bamboos, 812 species), and Olyreae (herbaceous bamboos, 124 species)[3,4].

A bamboo culm consists of an internode (which is hollow for most bamboo) and a node, which is solid and provides structural integrity for the plant[4]. *Thabasir* is a white silica exudate found in the internodes of stems of the female bamboo. This siliceous concrete is a crystalline, opaque, irregular shaped, light, soft and brittle substance. It contains 70% of silica or silicon as hydrate of silicic acid, peroxide of iron, potash, lime and alumina. Traditionally it has been used in wide range of ailments such as hyperdipsia, diarrhoea, vomiting, heart diseases, cough, asthma, jaundice, fever, tuberculosis, bronchitis, leprosy, paralytic complaints, anemia and as a general tonic in convalescents. Generally, a small quantity of *Thabasir* is available in the bottom and sides of the cavity of bamboo. Therefore, the genuine *Thabasir* obtained from the bamboo culm is adulterated with some other stones such as Calcium carbonate and sold at Sri Lankan and Indian markets.

As per Unani classical texts, *Thabasir* is the limestone which accumulates in the cavity of the female bamboo plant. It is in the form of moisture and it becomes dry later. Its *Mizaj* (Temperament) is *Sard* 1 Vo *Khusk* 2 (cold 1 dry 2). It possesses properties like, *Mufarrih e Qalb* (cardiac exhilarant), *Qabis* (astringent), *mubarrid* (Cooling), *mujaffif* (Desiccant) and *Daf e Humma* (febrifuge). It is mentioned as having adverse effects for sexual organs and lungs and to rectify the adverse effects, it is recommended to use with Honey/ *Pistacia lentiscus* or *Ziziphus jujuba* Mill. Its substitute is *Portulaca oleracea* Linn. and its dose is 1-3 grams. It is mentioned in Unani Medicine that *Thabasir* is beneficial in palpitation of heart, weakness of heart, fever and to quench the thirst. The compound medicines prepared by using *Thabasir* in Unani medicine are *Safoof e Thabasir, Habb e Thabasir, Qurs e Thabasir, Safoof e Sat e Gilo, Qurs-e-Thabasir Mulaiyinin, Qurs-e-Thabasir Qabiz, Jawarish-e-Thabasir* [5,6,7].

In Ayurvedic systems of medicine, two types of bamboo are distributed all over the world. They are: *Bambusa arundinacea* Retz. (Big size) and *Dandrocalamus strictus* (Small size). *Bansalochana* or Manna is found in the interior of the stem of *Bambusa arundinacea,* near the nodes. The camphor of Vansa (*Bambusa arundinacea*) silicious matter found near the joints inside is a white camphor like substance[8]. It is a white silicon concrete crystalline substance which is an opaque, irregular shaped, light, soft and brittle. It contains 90 % silica or silicon as hydrate of silicic acid, peroxide of iron, potash, lime, aluminium, vegetable matter, cholin, betain, nuclease, urease, proteolytic enzyme, diastatic and emulsifying enzyme, cyanogenetic

glucoside[2,9]. Its potency is cold and the taste is sweet. It is a valuable drug which possess *Vata-pittashamana* (neutralizing black bile and choleric humours), *Trishnanigrahana* (reducing excessive thirst), *Grahi* (absorbing excessive moisture of GIT, *Hridya* (Cardiac tonic), *Rakta stambhana* (hemostatic), *Kaphanissaraka* (expectorant), *Shvasahara* (relieving bronchial asthma), *Mutrala* (diuretic), *Jvara-ghna* (febrifuge) and *Balya* (improving strength)[9,10,11].

Therefore, it is useful in the management of ailments such as hyperdipsia, diarrhoea, vomiting, heart diseases, cough, asthma, jaundice, fever, tuberculosis, bronchiectasis, lung cavities, bronchitis, leprosy, paralytic complaints, anaemia, emaciation and as a general tonic in convalescents. Generally, it is very difficult to get the genuine *Vansalochana* as it is to be obtained from bamboos which are to be split open [8][12].

Conclusion

The literature reveals that the various therapeutic properties of *Thabasir* mentioned in Unani and Ayurvedic medicine such as cardiac exhilarant and tonic, astringent, cooling, desiccant, febrifuge, tissue builder, aphrodisiac, spermopiotic, thirst quencher, haemostatic, expectorant, diuretic and as a general tonic. However, up to now no research studies have been carried out to prove these therapeutic effects scientifically. Therefore, the information available in this review would help to do further research in this regard. Further, due to its cost and difficulty in getting the genuine sample, adulteration is very common with *Thabasir*.

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