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Sibr (*Aloe barbadensis*): A Broad-Gauge Confine of Conventional and Contemporary Amend

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ABSTRACT

In many parts of world, there is still a tradition of using herbal drugs to combat various diseases & infections. Sibr is one of the essential components of Unani system of medicine and used by Unani physicians due to it has a lot of medicinal properties since ancient time. It is commonly called aloe-vera and belongs to the Liliaceae family. It is a cactus like herb and grows in hot and arid environment. Unani physicians have been using this drug as a laxative, purgative (phlegm/bile), brain tonic (strengthen brain), stomach tonic (strengthen stomach), liver tonic (strengthen liver), emmenogogue, anti-inflammatory, blood purifier, antibacterial and carminative agent. Hence, this drug having a vital place in Unani system of medicine and text. It is also use to reducing low density lipoprotein, increasing high density lipoprotein, minimizing frost-bite injury, reducing blood glucose level, fighting against acquired immuno deficiency syndrome (AIDS), allergies and boosting immune system. This article was designed to lime light the Aloe barbadensis by describing its brief toxicology, contraindications, traditional, therapeutic and others uses.

Keywords: Antibacterial, Aloe barbadensis, Sibr, Therapeutic, Unani system of medicine

INTRODUCTION

Sibr (aloe vera) is an extremely popular herbal drug amongst the various currently available herbal remedies and at the moment receiving a lot of scientific attention [1]. Sibr is an oldest medicinal plant ever known and most applied medicinal plant globally used for centuries for its health, beauty, cosmetic, vigor, wellness and medicinal properties [2,3]. The word aloe has originated from the Arabic word viz. "Alloeh", meaning a 'shining bitter substance,' whereas "vera" in Latin means "true," about 2000 year back. The Unani scientists considered Sibr as the universal panacea and Egyptians called it "the plant of immortality." Nowadays, the plant of Sibr has been used for different purposes in Dermatology and Cosmetology (Amraaz-e-jild Wa Tazeeniyaat) [3].

HISTORY

The history of our understanding of *A. barbadensis* parallels the history of scientific knowledge. *Sibr* has been used for its medicinal properties in many cultures such as Greece, Egypt, India, Japan, China and Mexico from thousand years. It is used by Egyptian Queens Nefertiti as beauty regimes. Dioscorides, renowned Unani scholar of Roman era, describe about the *Sibr* in his Medical treatise "*De Materia Medica*" [3].

BOTANICAL DESCRIPTION [4]

Taxonomy

Kingdom: Plantae
Order: Asparagales
Family: Liliaceae
Genus: Aloe
Species: A. vera

Plant profile [3,5-7]

Botanical Name: Aloe barbadensis Linn.
 Common Name: Aloe Vera

Common Name: Aloe VersFamily: Liliaceae

Vernacular names [5,7-10]

• Arabic: Sibr

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• Persian: Shabyar, Alwa

Hindi: Ailwa, Ghee-kanwar

• Greek: Faigra

• Sanskrit: Kumarai, Aileekh

English: Indian aloes

Romi: Alya

Part used

The dried and fresh juice of the leaves, leaf gel, the whole leaves, the gel from the water storing tissue and the roots [7,8,11].

Temperament (Mizaj)

- Hot and dry in second degree [5,7,8].
- Hot in second degree and dry in third degree [9,12,13].

Geographical distribution

There are about 250 species of *A. barbadensis* grown throughout the world. Amongst them 2 species are grown commercially e.g. *A. barbadensis* Miller and *A. arborescens*. It is grown in warm, tropical regions and cannot stay alive in freezing temperature [1].

Aloe vera is a native to North Africa, the Mediterranean region of South Europe, Canary Island, Southern Arabia, and Madagascar. It is now cultivated throughout the West Indies, North and South Tropical America, Caribbean and tropical Asia [14-16]. In India, it grows wild on the coast of Mumbai, Gujarat and South India [17,18].

Traditional uses

It is popular amongst various traditional medicines like Chinese, Ayurvedic, Unani etc. In Ayurvedic medicine, it is used internally as a uterine stimulant, laxative, vermicide and hemorrhoid remedy. Topically, it is used to treat various skin disorders like eczema, psoriasis in different proportion with licorice root. In Arabian medicine, the fresh gel of aloe is rubbed on the forehead to lighten the headache and also rubbed on the whole body to cool it in case of pyrexia. It is also use to heal the wound, to cure the conjunctivitis and as a disinfectant [19].

Actions (Afa'al) [5-8,10,12,18,20-23]

Laxative/cathartic, purgative (phlegm/bile), Tonic to stomach and liver, vermicide emmenogogue, antiulcerogenic, anti-inflammatory, anesthetic, antibacterial, antiprostaglandin effect, antispasmodic, carminative, diuretic, blood purifier, antileprotic.

MEDICINAL USES (ISTEMAL)

Gastro-intestinal tract

Aloe relieves obstruction of liver and stomach, act as a tonic for liver and stomach and is beneficial in jaundice. The drug is widely used for constipation, anal fissure and hemorrhoids [10,24,25]. It is used in worm infestation due to its vermicide action [7,22]. The stem is used in dysentery [10].

Central nervous system

It purifies the brain, eyes by excretion of corrupt humors from them. It is beneficial in melancholia and in case of headache it mixed with rose oil and applied on forehead [24,25].

Respiratory system

It is used in children suffering from bronchial asthma [10,22,25].

Skin

Radiation burns, thermal burns, frost bite, wound healing in pressure sore, seborrhoeic dermatitis and psoriasis [9,10,20,25-27].

Fertility and menstruation

In a study aloe compound was found to improve fertility in 85%, the menstrual function also improved in 44.60%. It has been concluded that aloe compound is very useful in case of functional sterility [28]. It is also used in various menstrual disorders such as amenorrhea, oligomenorrhoea [7,8,22].

Analgesic activity

Carboxypeptidase was found to have a significant analgesic effect and inhibited the acceleration of vascular permeability with acetic acid inflammation. It has been suggested that carboxypeptidase may be a main anti-inflammatory agent of aloe, though other compounds could contribute to the effect [29].

Musculoskeletal system

Aloe is also beneficial in joints pain (wajaul mafasil). It mixed with roghan-e-gulab and used as a Tila in Wajaul Mafasil [6,9,10,22-24].

Dose (Miqdar-e-khurak) [7-9,13,22,23]

6 gm, $4\frac{1}{2}$ g-9g, 1 ratti-4 ratti, $3\frac{1}{2}$ masha- $4\frac{1}{2}$ masha, 1.75 masha- $3\frac{1}{2}$ masha, 7 masha, $10\frac{1}{2}$ masha.

Substitute *(badal)* [5,7,8,22]

- Turbud (*Ipomoea turpethum* R.)
- Usara Rewand
- Huzuz double its weight, says Ibn-e-Masawaih
- Rasoot double its weight and Afsanteen, Zafraan

CHEMISTRY

The aloe yields two important products:

Aloe resin

It is the solid residue obtained by evaporating the latex obtained from the pericyclic cells beneath the skin. The

bitter yellow latex contains the anthroquinone barbaloin (a glucoside of aloe-emodin) and iso- barbaloin in addition to a series of o- glucosides of barbaloin called aloinosides chrysophanic acid and upto 63% resin. Filtering out resins from the exudates and concentrating the remaining anthroglycoside material into crystalline form produces aloin. The concentration of anthroglycosides varies with the types of aloe ranging from 4.5 to 25% of aloin. Aloin is a mixture of water soluble glycosides obtained from aloe [30].

Dried leaf juice

Anthranoids: Anthrones mainly the c-glycosides, aloins A and B (barbaloin, isobarbaloin and stereoisomers of 10-glucosyl-aloe-emodin anthrone), other glycosides include 8-0-methyl-7-hydroxy aloins A and B, aloinosides A and B (aloin-11-0-rhamnosoids). Small quantities of 1, 8-dihydroxyxanthraquinoid glycones, including aloe-emodin and chrysophanol are present [11].

Chromones: Major constituents are aloesin and aloeresin E. lesser quantities of isoaloresin D, 8-c-glucosyl-7-o-methyl-aloesol and related glycosides which may be esterified at the glucose moiety by either cinnamic, p-coumeric or ferulic acids are also present. Non-glycosylated chromones include 7-hydroxy-2, 5-dimethyl chromone, furoaloesone, 2-acetonyl-7-hydroxy-8-5-methyl chromone and 2-acetonyl-8-7-hydroxy-5-methyl chromone [11].

Phenyl pyrones- glycosides include aloenin and aloenin B [11].

Other constituents: Cinnamic acid and 1-methyl tetralin, salicylates, cholesterol, .tryglycerides, magnesium lactate, carboxypeptide [11,31].

Toxicology [7,8,23]

- Harmful (*Muzir*): It is harmful to intestine due to its erosive property
- Corrective (Musleh)
- Kateera (Sterculia urenus)
- Gul-e-surkh (*Rosa damascus* mill)

Side effects

- Gastrointestinal: Spasm, irreversible intestinal mucosa damage, hemorrhagic diarrhea due to internal use of dried juice and pigmentation of intestinal mucosa (pseudomelanosis coli). These side effects usually resolved after withdrawal [11,21,32-34].
- **Genitourinary:** Red-colored urine, nephrotoxicity due to use of dried juice internally [11,34].
- **Skin:** Contact sensitivity, severe burning sensation, itching, rash, pruritis after the application of Aloe vera to skin [33].

- Aloe can reportedly cause muscle weakness, cardiac arrhythmias, peripheral edema, and weight loss [33].
- Reproductive: Uterine contraction causes spontaneous abortion, premature labor (internal use of dried juice). Aloe has been associated with congenital malformations, thus its use is contraindicated in pregnant and nursing women [35].

Contraindications

- Dried aloe juice should not be used internally in case of pregnancy and lactation because anthraquinone is secreted in breast milk [21,31,32,34].
- It is contraindicated in patients with kidney disease, cardiac disease, bowel obstruction, IBS and appendicitis [31,32].
- It should not be used topically on deep wounds [32].
- It should not be used topically by persons who are hypersensitive to this plant or plants in the Liliaceae family such as garlic, onions etc [32].

INTERACTIONS

Herb/drug

Aloe product taken internally may increase the effects of antidysrhythmics (e.g. quinidine), cardiac glycosides, loop diuretics, potassium wasting drugs, thiazide diuretics [32,34].

Herb

- The action of jimsonweed is increased in case of chronic use of aloe.
- Licorice may cause hypokalemia when used with aloe or taken internally [32].

Compounds (Murakkabat) [7,8,23]

The famous Unani Compound formulations of Sibr are as follows:

- Habb-e-tinkar
- Habb-e-shibyar
- · Habb-e-mudir
- Habb-e-sibr
- Habb-e-ayarij

CONCLUSION

In last few decades, there is increased interest in understanding the mechanism of action and development of herbal drugs for wellness of human being. Treatment based on allopathic drugs is effective in the prevention and management of diseases, but it is very expensive and has a lot of adverse effects. Hence, the implication of natural herbal drugs in prevention and management of diseases,

day by day are increasing all over the world, especially in the developing countries, due to their affordability and less toxicity. The A. barbadensis Linn (Sibr) has been used by renowned Unani physicians since ancient time to treat various bacterial infection, gastro-intestinal disorders, skin conditions, fighting against allergies, to heal cancer and boosting the immune system. Along with this, Sibr has many other uses which are supported by various researches done by researchers across the world. Traditionally, A. barbadensis Linn is used to treat a huge variety of health problems. Consequently, there is a burning call to investigate the biological activity of its phytoconstituents for development of a new more effective, economical, reliable herbal drug with better efficacy and higher safety margin.

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CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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