SHIBE YAMANI (ALUM) AND ITS THERAPEUTIC EFFECTS IN UNANI SYSTEM OF MEDICINE: A REVIEW

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ABSTRACT
Shibe yamani (Potash alum) commonly known as phitkari is used as medicine in Unani system, since antiquity. It is an easily available mineral origin drug, found in the form of crystals. Due to its astringent property Shibe yamani is mostly used as antiseptic, haemostatic, dessicant etc. It is an important constituent of various Unani compound formulations. Apart from therapeutic uses it is one of the most common coagulant used in water treatment. Various properties (physical, chemical, medicinal) and uses of Alum is reviewed in this article, as mentioned in Unani literature as well as established through modern scientific research.

KEYWORDS: Shibe Yamani, Alum, Unani Medicine, Phitkari

INTRODUCTION
Shibe yamani (Alum) is a traditionally known salt in Indian (Unani and Ayurvedic) and Chinese systems of medicine. It is a mineral origin drug commonly known as phitkari. It is a naturally occurring sulphate mineral also known as mineral salt. Due to its astringent property, it is used as therapeutic agent in various bleeding and inflammatory conditions such as epistaxis, tonsillitis, pharyngitis, vaginitis, piles etc. It is an important part of many products created by pharmaceuticals, cosmetics and food industries.

CHEMICAL NAME:
Potassium aluminium sulphate decahydrate

MOLECULAR FORMULA: KAl(SO₄)₂·12H₂O

SYNONYMS: Potash alum, Potassium alum, Kalinite

VERNACULARS

DESCRIPTION IN UNANI LITERATURE

MAHYAT (MORPHOLOGY):
Zaj or phitkari is a mineral origin drug which is clean and bright in appearance like salt. It is having strong astringent property. Based upon colour it is of four types white, green, yellow and red. White coloured is called phitkari, green one is called as heera kasees, yellow one kasees and red as surkh phitkari. According to Unani physicians best quality alum are those which easily shatters.

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Fig 1: Alum (Shibe yamani) powder and crystal
Physicians used alum in mouthwash, as pessary for menorrhagia, has cosmetic uses as deodorant by inhibiting the growth of the axillary malodor upon concentration accordingly. Study by al-Talib et.al revealed that alum has excellent antimicrobial effects against axillary malodor. 

**Miqdare Khurak (Dosage):**

1 mash = (9.72 grams), 1 mash = 1.75 mash, 2 - 4 ratti, (8 ratti = 1 mash)

Muzir (Harmful effects): Harmful for lungs, stomach and intestine.

Musleh (Corrective): Ghee, milk, loobat, Mazah (Taste): Bitter, pungent, sour, sweetish and astringent

**Badal (Substitute):** Phitkari surkh, naushadar, kafe darya, namake siyah and aqaqia.

**Murakkab (Compound Formulations):** Sunooone mukhrije rutubat, safooote istehazara barule katoori, habe siyah chashm, daware siyah, habbe siyah, habbe jauharen, jauharen naushadar, kuhi gule kunjad, kushate hadtal, kushate murakrab, kushate gaudanti, kushate sammu, kushate sange basari, kushate sange jarat, kushate seas, kushate shangar, majune kundur, manjan musakkin, safooote indar julub, safooote Phitkari, safooote surkh, shiyafe zutra degar, shiyafe ahmar, susoono chob chini, sunoone khas, sunoon zard, sunoon supari, sunoone kalen, surma muqawwie basar, tilae surkh, zaroore bhodal kushat, kwashate para.

**Physicochemical Properties / Scientific Description:**

It is colourless, transparent, odourless, crystalline masses or granular powder with a sweetish astringent taste. It is a hygroscopic material which when exposed to air absorbs water.

When heated it melts and at about 200°C loses its water of crystallisation with the formation of the anhydrous salt. A 10% solution in water has a pH of 3 to 3.5.

**Elements:** Potassium, aluminium, sulphur and oxygen, Mol. ecular wt: 258.20 g/mol, Melting point: 92.5°C, Boiling point: 200°C

**Solubility:** Soluble in cold water, very soluble in hot water, insoluble in alcohol, ether, acetone and other organic solvents.

**Origin/Production:**

Extensively manufactured in India, chiefly in the Punjab, Bihar and Cutch.

**Actions:**

Astringent, styptic, emetic, haemostatic and antiseptic.

**Uses:**

1 - 4% of alum solution is used as mouthwash or gargle in stomatitis and pharyngitis. It is employed in the treatment of lead colic and as an emetic in the treatment of poisoning.

Application of alum crystals can be used as haemostatic for superficial abrasions, cuts and ulcers on the lips. Alum can be used as 0.5% irrigation in the treatment of leucorrhoea and it was used for the treatment of herpes simplex labialis. Mixture of alum and egg white is extensively applied to contusions, sprains and ecchymosis. When burnt it is mild caustic in nature and is generally sprinkled as powder on indolent and foul ulcers. In Homeopathic system of medicine, potash alum is used in the treatment of dementia and asthma. Due to its astringent property, it is efficacious in the treatment of intravesical haemorrhage caused by prostate and bladder cancer or haemorrhagic cystitis. Alum can also control haemorrhage from advanced rectal carcinoma or oesophageal varices. It is safe and effective and thus used as the drug of choice for persistent vesical haematuria. It also has cosmetic uses as deodorant by inhibiting the growth of the bacteria responsible for body odour. In ancient Babylon, physicians used alum in mouthwash, as pessary for menorrhagia, as treatment for itchy scabs, gonorrhoea and purulent ophthalmia.

**Other Uses:**

Used as colouring agent, as shaving agent, as flocculating agent for water purification. Due to anti bacterial properties used as deodorant. Useful as hair remover, anti wrinkle agent. Also used in paper industry, as flame retardant in fire extinguishers, in baking powder, in pickle making, in toothpaste, as a mordant (binder) in dyeing industry. It is also used as an ingredient in some homemade and commercial modelling clay.

**Toxicity:**

Aluminium toxicity causes neurobiological degeneration in the central nervous system which can lead to encephalopathy, malaise, speech disorders, dementia, convulsions and vomiting. It can also cause allergic reaction in susceptible individuals.

**Pharmacological Studies:**

**Antifungal Activity:**

Rasha Abd. Al Mehdi Flayeh studied the antifungal activity of alum on yeast isolated from mouth lesions and concluded that alum could probably be used for the control of fungal isolates and prevent infections such as oral thrush and mouth ulcer.

**Antineoplastic Effect:**

Potash alum (CF-CpG-alum) has been used in the treatment of neoplasm in vivo in form of combined conjugate vaccine by Zhang et al. CF-CpG-alum produced a stronger antigen-specific immune response and inhibited tumour growth.

**Mosquito Larvicidal Effect:**

Study by Preet & Seema demonstrated that larvicidal effect of potash alum against malaria vector Anopheles stephensi were comparable to various biological and chemical insecticides.

**Antibacterial effect:**

A 0.02 M alum mouth rinse twice daily was found very much effective in reducing the salivary mutans Streptococci level in the children of age group 9–12 years.

**Haemostatic Effect:**

Local application of aluminium potassium sulphate on the tonsillar bed during tonsillectomy was found beneficial in regard to decreased volume of blood loss, procedure time and number of ties used.

**Effect on Recurrent Aphthous Ulceration / Anti inflammatory:**

Tagreed et al. found that alum reduces inflammation of mucous membrane and promotes healing. Pain disappeared after treatment with alum from the first day of treatment. Alum shortened the duration of healing on RAU with lack of any side effects.

**Contraceptive Effect:**

Singh et al. showed the contraceptive effect of potash alum in an, in-vitro study Aqueous solutions of potash alum make sperms completely immotile or cause their death depending upon concentration accordingly.

**Antimicrobial Effects Against Axillary Malodor-producing Bacteria:**

Study by al-Talib et.al revealed that alum has excellent

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antimicrobial effects against axillary malodor-producing bacteria and is recommended to be used either directly by topical application or as an active ingredient in deodorants and antiperspirants. The antimicrobial activity of alum against axillary bacterial flora was tested in vitro using broth dilution method for different concentrations (0.307–20mg/mL) on Luria-Bertani broth. Alum showed excellent inhibitory effects on all tested bacteria.

CONCLUSION:
Shihe yamani is being used as medicine since antiquity. In present era it is essential to explore its medicinal values at molecular level with the help of various tools and techniques. More studies should be conducted to elucidate the molecular mechanism of interaction of this mineral origin natural drug, with human body in different diseases. There are many actions and uses of Shihe yamani, mentioned in Unani literature which is practised since old times. So it should to be validated by conducting scientific research and prove the claims of Unani physicians.

REFERENCES: