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Compressive Review of Single Drugs used in *Zeeq-un-nafas* (Asthma)

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ABSTRACT

Bronchial asthma is a serious global health problem. The latest estimation of WHO indicates that there were 417,918 deaths due to asthma at global level. Among India's 1.31 billion people, about 6% of children and 2% of adult have asthma. It is a chronic disease characterized by episodes of acute bronchial constriction causing shortness of breath, cough, chest tightness, and rapid respiration and wheezing. Asthma is described with different names in Unani literature as Rabu, Zeeq un Nafas, and Dama. In Unani literature, asthma is caused by thick Phlegm which is adhered on the bronchial mucosa to develop narrowing of lumen. In Unani perspective, it is characterized by paroxysm of breathlessness with or without cough, cold and fever, sometimes sweating, low body temperature and increased respiratory rate. As we all know, medicinal plants are always a constant source of medicaments for the variety of disease; Unani scholars have also found effective treatment for the bronchial asthma with plants. Since asthma is explained as a disease with cold and moist temperament, the management of asthma is done by hot and dry drugs (ilaj bil zid). This review paper is an attempt to give knowledge about some single drugs used in Unani medicine to treat bronchial asthma.

1. Introduction

Bronchial Asthma

Asthma is a chronic lung disease characterized by episodes of acute bronchial constriction causing shortness of breath, cough, cold, chest tightness, rapid respiration and wheezing. In other words, it is chronic inflammation of bronchial tubes that causes swelling and narrowing of airways. Asthma is derived from Greek-word "aazein", means to exhale with an open mouth, to pant and sharp breath. The earliest words for respiratory distress were found in China and Babylonian code of Hamurabi (Gholve *et al.*, 2015). Roman doctors described it as gasping and mobility to breathe without making voice. Pliny the elder, observed pollen as a source of respiratory difficulty. He suggested ephedra (fore runner of ephedrine) in red wine as an asthma remedy. He also put forward the drinking of wild horse's blood and eating 21 millipedes soaked in honey in the managements of bronchial asthma. According to modern perspective, people with asthma have inflamed airways which are sensing to things may not bother other people. These things are termed triggers and vary from person to person. Interestingly, these can be correlated with the six essential and non-essential factors described in unani system of medicine (Conrad-1997; Stephens-2010).

And it was Buqrat who studied the effects of climate, clothes, drinks, eating habits and other factors or causation of Asthma and also thought that the disease can be hereditary. There are many terms which are used for Asthma in Unani system of Mesicone. Some important symptoms include Rabu, Bihar, Zeequnnafs, Dama and Intesab-al - nafs. According to Unani, the main cause of the disease is accumulation of Balgham lazij (stichy phlegm) in airways and leading to narrowing of lumen. They also mentioned that during this narrowing of bronchial lumen occurs; air become incapable to enter into lungs during inspiration and to fulfill the deficit of air, the subject is compelled to breathe rapidly. Many Unani scholars have described asthma in their own ways. Scholars like Ali bin Abbas majoosi, Ismail jurjani, and Rabban Tabri suggested that asthma is caused by cold and diluted fluid (Barid and raqeeq khilt) (Ahmer *et al.*, 2015). They also described that such fluids develop more severe form of

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breathlessness. Ibn Sena in his Alqanoon, described, when due to spasm in air passage, there is difficulty in passage of air during respiration, and then called it as zeequnafas. Razi described the most severe form of asthma as intesb-un-nafas. Many Indian unani physicians like Hakim Muhammad Azam khan, Hakim Akbar arzani, Hakeem Hussain, Hakim Ajmal Khan also threw important light on the problem. It was Hakim Ajmal Khan who described asthma as follows: it is a dreadful and discomfortable disease whose treatment is very difficult. It is characterized by bronchospasm resulting in breathlessness. And it was Hakim Ákbar arzani who first used medicine in the form of Bakhoor (smoke) which is similar to inhalation performed today. Management of Zeequnafas shobi is usually described on the basis of etiopathogensis including signs and symptoms. Nuzj and Tanqia of balgham lazij is basis of management of Asthma. To facilitate easy elimination of abnormal humour, it is necessary to change the viscosity of ailing humour to its physiological state and is called nuzj. To achieve the purpose, selective munzije, mushile va mukhrije ya munafi balgham is used. Sometimes muqiat, mukattifat are also used. As a precautionary measure, phelmegouge and allergic drugs or diet should be avoided. Light diet should be prescribed and should be kept away from humid places. Unani medicinal system has described a number of plants which have been used by physicians for the management of bronchial asthma. The active principles of many plant species sees isolated for direct use as drugs or pharmacological agents. Even though many medicines are available in modern system, many side effects are there. Those include frequent problems like nausea, vomiting etc. and infrequent problems like headache, dry mouth, muscle tremors, throat dryness etc. As modern era is searching for natural and traditional medicines, it's essential to note the importance of Unani System of Medicine. The present view is an attempt to give knowledge about some single drugs used in Unani medicine to cure Bronchial asthma (Hassan-2017; Abramowitz and Braddock 2008; Hobbs-2002)

Adrak

Botanical name: *Zingiber officinale Rosc* Family: Zingiberacea
Vernaculars:
Arabic: Zanjabeel yabis (dry)
Bengal: Ada
English: Ginger
Sanskrit: Adraka
Urdu: Adrak (fresh) sonth (dry)
Malayalam. : inchi (fresh) chuk(dry)

Mizaj: Har (2) Yabis (1) [fresh] Har (3) Yabis (2)[dry]

Ginger is a perennial herbaceous plant from zingiberacea family. Its generic name is derived from the Greek zingiberis, which comes from Sanskrit name of spice singabera. Its use in India and China has a reed appearance. The leaves are 2 inches long, elongated, raised from sheaths overlapping the stem. The flowers are cone like spices. Each bract encloses single, small yellow greenish purple flowers. Both fresh and dried gingers have its own medicinal values. The main actions mentioned in Unani classical literature includes: Hazim (digestive), kasire riyah (carminative) ,munafis balgham (expectorant), jali(detergent), dafae qai (antiemetic), dafae suaal mushthahi (appetizer), muqawwi hafiza (memory enhancer), muqawi bah (aphrodisiac) etc. Since centuries it has been an important unani medicine for the treatment of nazla (catarrah), amraze asbi (nervous disease), wajaul asnan (toothache).

Zeequnnafs (asthma), wasi (sprain), humae mutadi(contagious fever), deedane ama (helminthiasis), ziqatuddam (hypertension) etc. Humorally speaking, dry ginger's main thrust is to reduce and subside excessive or increased phelgm by concoting and dissolving it. Thus useful in concoting the excessive cold phelgm in lungs and respiratory tract. The important chemical constituents include:1-2% volatile oil, containing zingiberine, zingerone, camphene, borneol, phellandrene and citral. Pungent principles includes gingerol, gingerdiones, shagaols. Experiments conducted on both guinea pig and human tracheas showed that [6]-gingerol, [8] gingerol, [6] shagaol induced rapid relaxation of precontracted airway smooth muscles[ASM]. Thus these indicate that, they provide relief of asthma symptoms when used in combination with beta-agonists Chen *et al.,* 2016; Rasyid *et al.,* 2020).

Adusa

Botanical name: *Adhatoda vasica*
Family: Acanthaceae
Vernaculars
English: Adhatoda
Malyalam: Aadalodakam
Sanskrit: Vrasaka
Urdu: Arusa, Adoosa

Mizaj: Har yabis

Adusa is a small, evergreen, perennial shrub from Acanthaceae family. Its trade name vasaka is based on sanskrit name. It is an evergreen shrub of 1-3 feet in height. Leaves are large and lance shaped. Flowers are either white or purple in color. Stem is herbaceous above and woody below. The main actions of adusa mentioned in unani classical literature includes: munafise balgham va mukhrije balgham (phlegm expectorant), mudire haiz (emmengogue) , mulayyan (laxative), Dafae humma (antipyretic) ,etc. In Unani medicine ,it's leaves, flowers, fruits and roots are extensively used for treating nazla (cold), suaal(cough), shaheeqa (whooping cough), muzmin warm e shoab (chronic bronchitis), Zeequnnafs (asthma)etc. Being a very good expectorant, it draws out all phelgm accumulated in lungs. The important chemical constituents include alkaloids, phytosterols, glycosides, vascine, vascinone. To evaluate the antitussive activities of Adhatoda extract, experiments were done in anesthetized guinea pigs and rabbits and in unanesthatized guinea pigs, which showed the plant have a good antitussive property. And recent investigations using vasicine showed bronchodilatory activity both in *in vitro* and *in vivo (*Ali and Hakeem 2020; Khan *et al*., 2020).

Asalussoos

Botanical name: *Glycyrrhiza glabra*
Family: Fabaceae
Vernaculars:
Arabic: Arq-al-soos
English: Liquorice root
Sanskrit: Madhuka
Urdu: Mullethi

Mizaj: Har (2) Yabis (1).
Har (1) Yabis (1).

Asal-u-soos is a hard perennial herb or under shrub. Glycyrrhiza is a Greek word which means smooth. The leaves of the plant are smooth compound and alternate. The flowers are lavender to white in color. They have branched roots that tastes sweet. The main actions that are mentioned in unani classical literature include: munaffis e balgham (expectorant), munaqqi qasha al ria (cleanses air passage), mulattif (demulcent), munaqqi sadr (clear lungs) etc. Traditionally it is used for the treatment of waja-u-sadr (chest pain), Rabu (asthma), suaal (cough) etc. The important chemical constituents of this plant includes: saponins, glycyrohyrin, glycossates, flavanosides etc. Licorice root has been widely used in treating bronchial asthma for many years. Experiments were done on BALB/c mice, by inducing glycorhyzin. The histopathologic features demonstrated that the chronic asthma model of mice was successfully established with significantly higher number of goblet cells and mast cells, increased thickness of epithelium etc.

Fifil Daraz

Botanical name: *Piper longum linn*
Family: Piperaceace Vernaculars
Arabic: Dare filfil
Bengali: Piplamor
Malayalam: Thippall
Urdu: Pippalli

Mizaj: Har Yabis

Piper longum Linn is a perennial climber, which is commonly known as long pepper. The word pepper is derived from sanskrit word Pipali. It is a long, slender, climber with woody root. Fruit spikes are cylindrical, oblong, berries, red or black, globose and aromatic when riped. The leaves are arranged alternately with an acute apex and entire margins. Almost all parts including stem,root and fruits are medicinally used in the treatment of bronchial asthma. The important functions of filfil daraz described in unani literature is as follows:mukhrije va munaffis balgham (expectorant),muqawi jigar (hepatotonic), muqawi meda (stomach tonic), hazim (digestive) etc..Therapeutically it is used in the following : zeequ nafs (asthma),nafkhe shikm (flatulence) ,zofe ishthiha (anorexia), zofe bah(sexual debility) etc Chemical constituents in piper longum include piperene, pipertine, lignans, esters, palmitic acid, zingeberine, volatile oils etc. The decoction of fruit was studied for antihistamine activity using Guinea pig ileum preparation (*in vit*ro and *in vivo*). It showed the presence of alkaloids, steroids and carbohydrates were effective in all models of asthma, thus proving it to be an antiasthmatic drug.

Filfil Siyah

Botanical name: *Piper nigrum L*
Family: Piperacea Vernaculars
Arabic: Filfil aswad
English: Black pepper
Malayalam: Kurumulak Sanskrit: Venuka
Urdu: Filfil siyah

Mizaj: Har (2) Yabis (2)

The plant is a perennial climber and it needs support for climbing. The leaves are large broad, ovate and round. Flowers appear in long spike. Fruit is berry which is 6mm in

size, green when unriped and red after ripening. The dried, mature and unriped are known as black peppers. It has external as well as internal functions in human body. Some of the internal functions include: muqawi jigar (liver tonic), muqawi Meda (stomach tonic), muharikk (stimulant), kasir e riyah (carminative), mudir bol va hayiz (diuretic and emmengogue), muqawwi bah (aphrodisiac), munafis va mukhrije.

Balgham (expectorant), tiryaq madah (stomach antidote) and externally it has the properties like jali (detergent), musakkin (sedative), jazibe khoon etc. Because of these properties it can be used in nafkheshikam (flatulence), badhazmi (indigestion), bars behak (leucoderma and vitiligo), zeequnafs (asthma), sore throat (khushoonathe halq), toothache (vajaul asnan), snake bite(maar gazida), scorpion bite (aqrab gazida) etc. Traditionally, Indian medicines and in pacific islands pepper from Piperaceae family carries piperione as a major active constituent that shows anti asthmatic activity along with other activities. Some studies showed that effects of piperine suppressed the infiltration of esnophil and this indicate that the piperine in black pepper provide relief for asthmatic symptoms. Other major chemical constituents include flavanoids, alkaloids, piperamine etc.

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