



Clinically Significant Improvement in a Case of Bronchial Asthma with Unani Medicine: a Case Report

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Abstract

Asthma is known by various terms as *dīq al nafs*, *ribw*, *bohr* and *dama* in Unani system of medicine. It is a chronic inflammatory paroxysmal disease characterized by spastic contraction of smooth muscles in bronchioles, which can cause extreme difficulty in breathing. According to the Global Asthma Report 2018, about 6% of children and 2% of adults in India are known to be living with asthma. Herein we describe a case of bronchial asthma which was successfully treated with Unani medicines. The patient was a 21 year old male, suffering from asthma for 19 years but without any co-morbidity. He was prescribed bronchodilator, anti-inflammatory and anti-spasmodic Unani drugs such as *tukhm khaṭmī* (*Althaea officinalis* Linn. seed), *tukhm khubbāzī* (*Malva sylvestris* Linn. seed), *aṣl-us-sūs muqashshar* (*Glycyrrhiza glabra* Linn., peeled root), *parsiāoshān* (*Adiantum capillus-veneris* Linn.) etc. in crude form as decoction. He was symptom free and medication free after 2 months of treatment till he last reported in April 2019. The results are attributed to the herbal drugs which not only provide symptom relief but also correct the airway hyper-responsiveness and correct the histopathological changes induced by asthma.

Keywords: Asthma; *Ribw*; Bronchodilator; Airways

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Introduction

Asthma is a chronic inflammatory paroxysmal disease characterized by spastic contraction of smooth muscles in bronchioles, which can cause extreme difficulty in breathing. Hallmark of the disease are increased airway responsiveness, broncho-constriction, inflammation of bronchial walls and increased mucus secretion. Bronchial asthma clinically presents as paroxysmal dyspnoea, cough, chest tightness and breathlessness, especially at night. This disease is common in all the ages but more prevalent in the age group of 10 to 30 years. The leading etiopathology is contractile hypersensitivity (especially by plant pollen) [1]. Asthma prevalence has been increasing rapidly over the last few decades all over the world. Intriguingly, statistics indicate that the prevalence is although high in developed countries, but is stabilized. While the prevalence is slightly lower in developing and under-developed countries, but is rapidly on the rise. This suggests the involvement of biological, environmental and social factors in its causation [2]. According to the Global Asthma Report 2018, about 6% of children and 2% of adults in India are known to be living with asthma, and this is just the tip of the ice-berg, as under-reporting is common in developing countries [3].

Bronchial asthma may be - (i) Type I (Extrinsic/ Atopic/ Allergic) (ii) Type II (Intrinsic/ nonatopic/ idiosyncratic)

(iii) Mixed. The other types of Bronchial asthma are Drug induced asthma (a very rare condition but commonly induced by aspirin) and Occupational asthma. Extrinsic type of asthma can be described as the most common type of asthma, prevalent in young age (10 to 30 yrs), very common in the people having family history of asthma or any kind of past history of Rhinitis, Urticaria, or Infantile eczema. The main cause of extrinsic asthma is hypersensitivity reactions due to plant pollen grains, household dusts, allergens, animal danders, moulds etc. Inhaling any kind of above mentioned allergens stimulates the production of IgE antibodies and they react with mast cells to release Histamine, slow reacting substances of anaphylaxis i.e. a mixture of leukotrienes, eosinophilic chemotactic factor, bradykinin, prostaglandins and platelet aggravating factors. The combined effects of all these factors are Localised oedema in the walls of small bronchioles, secretion of thick mucus into the bronchial lumen, spasm of bronchial smooth muscles and accumulation of eosinophils and neutrophils. These gives rise to symptoms like chest tightness, air hunger, difficulty in breathing and increased residual capacity. Diagnosis may be made by Spirometry, PEF (peak expiratory flowmeter), chest X-Ray and RAST (Radioallergosorbent test). Intrinsic type of asthma is more common in adults mostly associated with diseases like URTI (caused by viruses

like Rhinoviruses), nasal polypi and chronic bronchitis. Patients suffering from Intrinsic type of asthma show negative past history or family history of allergy, show negative skin test and no raised level of IgE. Mixed type of asthma is that asthma in which physician is not able to categorized patient into any kind of asthma extrinsic or intrinsic as the patient is having mixed symptoms [4].

Pathologically, grossly oedematous and over-distended bronchioles are characteristic of asthma. Microscopically, formation of twisted strips called as “Curschmann’s spirals” and diamond shape crystals in the sputum known as “Charcot leyden crystals” are seen [5]. Conventional management of bronchial asthma rests on bronchodilation, mostly administered as inhalers; and steroid injections to reduce disease severity. However, the disease is usually considered life-long and difficult to treat [1].

In Unani system of medicine asthma is known by various terms as *dīq al nafs*, *ribw*, *bohr* and *dama*. According to Avicenna (980-1035 AD), asthma or *dama* is a disease of respiratory system specifically involving lungs and whole bronchial tree in which there is difficulty in breathing similar due to which patient takes short and rapid breaths as if he is being strangulated [6,7]. The term *dīq al nafs*, meaning difficulty in breathing is used in Unani medicine as a comprehensive term for all conditions which lead to asthmatic symptoms, which

may be neurological, physical obstructions such as tumors, structural abnormalities of rib cage or *bohrān* (stage of crisis) in febrile illnesses. While the terms *ribw*, *bohr* and *dama* are used exclusively for asthma caused by pathology of lungs and airways [8]. Management should focus on use of drugs which dry and expel the humors causing the constriction and airway obstruction; alongwith symptomatic treatment. After necessary *tanqiya* (expulsion of morbid humors), exercises are prescribed to improve airway function. Constipation should be avoided and diet should be prescribed accordingly. Treatment may also be effected through *‘ilāj bit tadbīr* (regimental therapy) such as *dalk* (massage), *ḥammām* (Turkish bath), *qay* (emesis) and *mus-hil* (laxative) drugs may be utilized as necessary for expulsion of humors[6,9].

Case Report

A 21 year old male patient reported to the out-patients’ department of Majeedia Unani Hospital, Jamia Hamdard in September 2018 with complaints of breathlessness, cough with sputum and loss of appetite. He also had some complaint of constipation. He gave a history of bronchial asthma for the past 19 years, for which he was dependant on bronchodilator inhalers. On inquiry, he revealed that he had an attack of pneumonia at 2 years of age after which he developed the disease. On examination, the general condition was fair and vitals were

stable. His blood pressure was 110/80 mm Hg, pulse 75/minute and temperature 98°F. He denied having any acute illness or acute exacerbation of asthma in the past week. Chest auscultation revealed bilateral wheezing and apical crepitations. Haemogram, liver and kidney function tests were within normal limits. Fasting blood glucose was 108 mg/dl while post-prandial was 121 mg/dl. A chest roentgenogram revealed no abnormality.

As the patient was stable and not suffering from any co-morbidity, we decided to treat him exclusively with Unani medicines. If the need for conventional treatment occurred, he could be shifted to the emergency department immediately, which was explained to the patient. He was also asked to use his inhaler if needed. He was admitted to the hospital for proper monitoring and management. He was prescribed a decoction of *tukhm khatmī* (*Althaea officinalis* Linn. seed), *tukhm khubbāzī* (*Malva sylvestris* Linn. seed), *aṣl-us-sūs muqashshar* (*Glycyrrhiza glabra* Linn., peeled root), *parsiāoshān* (*Adiantum capillus-veneris* Linn.), *ābresham khām muqarrāz* (*silkworm cocoon*) and *ustukhudūs* (*Lavendula stoechas* Linn.). In addition, he was given Cap. Pitkiryā (an anti-allergic herbal formulation manufactured by Hamdard Laboratories, India), [10] Syp. Jigreen (a herbal formulation manufactured by Hamdard Laboratories, India which works as strengthening for liver and abdominal organs), [11] Habb. Zeeq-un Nafas (a polyherbal Unani formulation specific for bronchial asthma) [12] and Qurs Kushta

Abrak Siyah (tablets containing calcinate of talc which helps in controlling bronchial asthma) [13].

Within ten days of treatment, the patient should signs of clinical improvement and decreased need for inhalers. His appetite also improved. The patient was discharged after ten days and asked to continue the medicines, and to review in emergency department in case of acute attack, since the winter season was round the corner. The patient continued to take the medicines and reported the use of inhalers increasingly infrequently, which was no longer needed by him after two months. He last reported to the OPD in April 2019, by that time he had not used any conventional treatment and inhaler drugs for six months.

Discussion

Unani medicines have immense potential in the management of chronic illnesses, which was highly evident in the management of the above case. The treatment is extremely cost-effective, holistic in nature and is not a financial burden, so can be used in all types of clinical settings. The combination of drugs used in this case was done according to the Unani guidelines of age, mizāj (temperament), season and need of the patient. In accordance with Unani guidelines, we prescribed drugs which could correct his digestion and relieve constipation so that the *akhlāt-e-fāsida* (morbid humors) could be expelled easily [14]. The details of some important drugs are given in the table below:

Table 1: Some important Unani drugs used in Asthma

Drug	Botanical name	Active constituent and action	Reference
<i>Tukhm khaṭmī</i>	<i>Althaea officinalis</i> Linn.	Rhamnogalacturonan: Anti-tussive and anti-spasmodic by action on 5-HT (2) receptors.	[15]
<i>Tukhm khubbāzī</i>	<i>Malva sylvestris</i> Linn.	Flavonoids and anthocyanins: Anti-oxidant Mucilages: Cough suppressant Ascorbic Acid: Anti-oxidant and immunomodulator	[16]
<i>Aṣl-us-sūs muqashshar</i>	<i>Glycyrrhiza glabra</i> Linn	Glycyrrhizin: Correction of airway remodeling. Corticosteroid-like activity, it causes relaxation of bronchial smooth muscles; and flavonoids contribute to the anti-spasmodic action. The results were found comparable to prednisolone in a clinical study. Immunological effects (decrease in plasma leukotriene C, malondialdehyde and nitric oxide)	[17,18,19]
<i>Par-siāoshān</i>	<i>Adiantum capillus-veneris</i> Linn.	Flavones, phenolics and triterpenes: suppression of prostaglandins, interleukins and tumor necrosis factor- α involved in inflammatory reaction	[20]
<i>Ustukhudūs</i>	<i>Lavandula stoechas</i> Linn.	1,8-cineole: Anti-inflammatory A relaxant effect on tracheal smooth muscles has also been identified in the hydro-alcoholic extract.	[21,22]
Constituents of Habb. Zeeq un Nafas			
<i>Filfil Daraz</i>	<i>Piper longum</i> Linn.	Piperine: Reduces the allergic response through downregulation of CD4 and CD8 T lymphocyte subsets, production of IL-4 and IL-5 thereby preventing IgE production and eosinophil infiltration.	[23]
<i>Kakra Singhi</i>	<i>Rhus succedanea</i> Linn.	Rhusflavone: Anti-oxidant, anti-microbial especially against gram negative bacteria	[24,25]
<i>Asl-us-Soos</i>	<i>Glycyrrhiza glabra</i> Linn.	Glycyrrhizin: Correction of airway remodeling. Corticosteroid-like activity, it causes relaxation of bronchial smooth muscles; and flavonoids contribute to the anti-spasmodic action. The results were found comparable to prednisolone in a clinical study. Immunological effects (decrease in plasma leukotriene C, malondialdehyde and nitric oxide)	[19,18,17]
<i>Qaranfal</i>	<i>Syzygium aromaticum</i> Mer & L.M. Perry	Eugenol: Also other phenolic compounds like flavonoids, hydroxibenzoic acids, hydroxycinnamic acids and hydroxyphenylpropens. Clove exhibits anti-inflammatory and immunomodulatory activity through inhibition of Myeloperoxidase and decreases neutrophil count in animal models of asthma.	[26]
<i>Post-e-Anar Sheerin</i>	<i>Punica granatum</i> Linn. fruit epicarp	Ellagic acid, gallic acid and punicalagin A&B: Suppression of nitric oxide production, prostaglandin E2 production, and cyclooxygenase inhibition leading to anti-inflammatory action	[27]
<i>Asl</i>	Honey	Phenolic compounds: Anti-inflammatory, also alleviates the structural changes in respiratory epithelium caused by asthma.	[28]
Constituents of Cap. Pitkiryā			
<i>Asrol</i>	<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz.	Kaempferol (flavonoid): Inhibition of fatty acid amide hydrolase and free radical scavenging activity leading to anti-oxidant effect.	[29]
<i>Bacch</i>	<i>Acrous calamus</i> Linn.	Crude extract (n-hexane fraction): Inhibition of calcium channels and phosphodiesterase which leads to reduced rate and force of airway contractions in animal models of asthma	[30]
<i>Baranjasif</i>	<i>Achillea millefolium</i> Linn.	Hydroethanol extract: Inhibition of muscarinic receptors and stimulation of β -adrenoceptors causing relaxant effect on tracheal smooth muscles	[31]
<i>Barg-e-Shahtra</i>	<i>Fumaria parviflora</i> Lam.	Fumaric acid: Analgesic and anti-inflammatory	[32]
<i>Sumbul-ut-Teeb</i>	<i>Nardostachys jatamansi</i> (D.Don.) DC.	Valeranone: Tranquiliser, Histamine suppressant	[33]
<i>Ustukhudūs</i>	<i>Lavandula stoechas</i> Linn.	1,8-cineole: Anti-inflammatory A relaxant effect on tracheal smooth muscles has also been identified in the hydro-alcoholic extract.	[21,22]

Conclusion

Plant-based medicines have several advantages over synthetic agents, as the drugs often contain more than one active ingredient, along with several compounds which neutralize any possible adverse effects. [36] In many cases, crude drugs have been shown to have superior effects to synthetic drugs, even in acute diseases like bronchial asthma. [30] Asthma constitutes a medical emergency, hitherto considered untreatable even with the best known conventional treatments. The available treatment methods are largely aimed at providing clinical relief and controlling exacerbations. [34] Unani physicians have often embarked on seemingly difficult disorders and treatment methods like cauterization which are often dealt with skeptically. [35] In the above-mentioned case of asthma, the Unani formulations demonstrated exceptionally good results, and the drugs were easily tolerable without any adverse effects during the complete duration of treatment.

Conflict of Interest

None.

Acknowledgments

None.

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