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

Yasmeen Shamsi¹, Rabia Khan¹, Sadia Nikhat²*

¹Department of Moalejat, SUMER, Jamia Hamdard, New Delhi, India
²Department of Ilaj bit Tadbeer, School of Unani Medical Education and Research, Jamia Hamdard, New Delhi, India

Received: 3 Aug 2019  Accepted: 26 Aug 2019

Abstract

Asthma is known by various terms as ḍīq al nafs, ribw, boḥr 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), aşl-us-sūs muqashshar (Glycyrrhiza glabra Linn., peeled root), parsīoshān (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


*Corresponding Author: Sadia Nikhat
Department of Ilaj bit Tadbeer, School of Unani Medical Education and Research, Jamia Hamdard, New Delhi, India
E-mail: sadianikhat@jamiahamdard.ac.in, drsadianikhat@Gmail.com
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 in 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 iceberg, as under-reporting is common in developing countries [3].

Bronchial asthma may be - (i) Type 1 (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-distented 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 ḍīq al nafs, ribw, boḥr 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 to which patient takes short and rapid breaths as if he is being strangulated [6,7]. The term ḍīq 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 boḥrān (stage of crisis) in febrile illnesses. While the terms ribw, boḥr 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 ʻilāj 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 98ºF. He denied having any acute illness or acute exacerbation of ashma 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 khaṭmī (Althaea officinalis Linn. seed), tukhm khubbāzī (Malva sylvestris Linn. seed), aşl-us-sūs muqashshar (Glycyrrhiza glabra Linn., peeled root), parsīoshsān (Adiantum capillus-veneris Linn.), ąbresham khām muqarrar (silkworm cocoon) and ustukhudūs (Lavendula stoechas Linn.). In addition, he was given Cap. Pitkirya (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 is 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

<table>
<thead>
<tr>
<th>Drug</th>
<th>Botanical name</th>
<th>Active constituent and action</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tukhm khaṭmī</td>
<td><em>Althaea officinalis</em> Linn.</td>
<td>Rhamnogalacturonan: Anti-tussive and anti-spasmodic by action on 5-HT (2) receptors.</td>
<td>[15]</td>
</tr>
<tr>
<td>Tukhm khubbāzī</td>
<td><em>Malva sylvestris</em> Linn.</td>
<td>Flavonoids and anthocyanins: Anti-oxidant&lt;br&gt;Mucilages: Cough suppressant&lt;br&gt;Ascorbic Acid: Anti-oxidant and immunomodulator</td>
<td>[16]</td>
</tr>
<tr>
<td>Aṣl-us-sās muqashshar</td>
<td><em>Glycyrrhiza glabra</em> Linn</td>
<td>Glycyrrhizin: Correction of airway remodeling. Corticosteroid-like activity, it causes relaxation of bronchial smooth muscles; and flavonoids contribute to the anti-spasmodic action.&lt;br&gt;The results were found comparable to prednisolone in a clinical study.&lt;br&gt;Immunological effects (decrease in plasma leukotriene C, malondialdehyde and nitric oxide)</td>
<td>[17,18,19]</td>
</tr>
<tr>
<td>Par-sīāoshān</td>
<td><em>Adiantum capillus-veneris</em> Linn.</td>
<td>Flavones, phenolics and triterpenes: suppression of prostaglandins, interleukins and tumor necrosis factor-α involved in inflammatory reaction</td>
<td>[20]</td>
</tr>
<tr>
<td>Ustukhudūs</td>
<td><em>Lavandula stoechas</em> Linn.</td>
<td>1,8-cineole: Anti-inflammatory&lt;br&gt;A relaxant effect on tracheal smooth muscles has also been identified in the hydro-alcoholic extract.</td>
<td>[21,22]</td>
</tr>
</tbody>
</table>

**Constituents of Habb. Zeeq un Nafas**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Botanical name</th>
<th>Active constituent and action</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filfil Daraz</td>
<td><em>Piper longum</em> Linn.</td>
<td>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.</td>
<td>[23]</td>
</tr>
<tr>
<td>Kakra Singhī</td>
<td><em>Rhus succedens</em> Linn.</td>
<td>Rhusflavone: Anti-oxidant, anti-microbial especially against gran negative bacteria</td>
<td>[24,25]</td>
</tr>
<tr>
<td>Aṣl-us-Soos</td>
<td><em>Glycyrrhiza glabra</em> Linn</td>
<td>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)</td>
<td>[19,18,17]</td>
</tr>
<tr>
<td>Qaranfal</td>
<td><em>Syzgium aromaticum</em> Mer &amp; L.M. Perry</td>
<td>Eugenol: Also other phenolic compounds like flavonoids, hydroxibenzoe acids, hydroxicitaminic acids and hydroxyphenylproplens. Clove exhibits anti-inflammatory and immunomodulatory activity through inhibition of Myeloperoxidase and decreases neutrophil count in animal models of asthma.</td>
<td>[26]</td>
</tr>
<tr>
<td>Post-e-Anar Sheerin</td>
<td><em>Punica granatum</em> Linn. fruit epicarp</td>
<td>Ellagic acid, gallic acid and punicalagin A&amp;B: Suppression of nitric oxide production, prostaglandin E2 production, and cyclooxygenase inhibition leading to anti-inflammatory action</td>
<td>[27]</td>
</tr>
<tr>
<td>Asl</td>
<td>Honey</td>
<td>Phenolic compounds: Anti-inflammatory, also alleviates the structural changes in respiratory epithelium caused by asthma.</td>
<td>[28]</td>
</tr>
</tbody>
</table>

**Constituents of Cap. Pitkiryā**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Botanical name</th>
<th>Active constituent and action</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asrol</td>
<td><em>Rauwolfia serpentina</em> (L.) Benth. ex Kurz.</td>
<td>Kaempherol (flavonoid): Inhibition of fatty acid amide hydrolase and free radical scavenging activity leading to anti-oxidant effect.</td>
<td>[29]</td>
</tr>
<tr>
<td>Bacch</td>
<td><em>Acorus calamus</em> Linn.</td>
<td>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</td>
<td>[30]</td>
</tr>
<tr>
<td>Baranjasif</td>
<td><em>Achillae millefolium</em> Linn.</td>
<td>Hydroethanol extract: Inhibition of muscarinic receptors and stimulation of β-adrenerceptors causing relaxant effect on tracheal smooth muscles</td>
<td>[31]</td>
</tr>
<tr>
<td>Sumbul-ut-Teeb</td>
<td><em>Nardostachys jatamansi</em> (D.Don.) DC.</td>
<td>Valeranone: Tranquiliser, Histamine suppressant</td>
<td>[33]</td>
</tr>
<tr>
<td>Ustukhudaś</td>
<td><em>Lavandula stoechas</em> Linn.</td>
<td>1,8-cineole: Anti-inflammatory&lt;br&gt;A relaxant effect on tracheal smooth muscles has also been identified in the hydro-alcoholic extract.</td>
<td>[21,22]</td>
</tr>
</tbody>
</table>
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.

References
[17] Hocaoglu AB, Karaman O, Erge DO, Erbil G, Yilmaz O, Bagriyanik A. Glycyrrhizin and Long-Term Histo-


