

CASE REPORT

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Childhood Asthma Treatment in a 12-year-old Boy according to Iranian Traditional Medicine in Tehran

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Received: 10 Apr 2017

Accepted: 2 Aug 2017

Published Online: 29 Sep 2017

ABSTRACT

Background: Asthma is a chronic inflammatory and multifactorial respiratory disorder that affects millions of children around the world. In the recent years, for treating many diseases including asthma, the use of complementary and alternative therapies has increased. The purpose of this report is to provide clinical experiences with the use of Iranian Traditional Medicine, in the treatment of a case of childhood asthma, having the greatest therapeutic effect in the shortest time.

Case Presentation: The patient is a 12-year-old boy and a known asthmatic case. He had been treated by common modern medical drugs for some time, but despite continued treatment, there had been exacerbation of symptoms. Upon being referred to the Iranian Traditional Medicine clinic and beginning measures and drug treatments (oral and topical) according to temperament and the disease status, he improved dramatically and now does not need to take medicines.

Conclusion: Regarding the patient's improvement process, using the therapeutic methods of Iranian Traditional Medicine as one of the schools of complementary and alternative medicine ensured better results. Thus, it is better to consider these therapeutic methods with the common treatments prescribed by modern medicine.

Keywords: Asthma, Children, Iranian Traditional Medicine, Complementary Medicine

Citation: Mehrdad Karimi, Maryam Sadat Paknejad, Monireh Sadat Motaharifard. Childhood Asthma Treatment in a 12-year-old Boy according to Iranian Traditional Medicine in Tehran. Asian J Clin Case Rep Trad Alt Med, Apr - Sep 2017; 1(2-3): 1-8

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Introduction

Asthma is the most common chronic disease in children and it is highly prevalent in industrialized countries [1]. Today, the number of children with asthma, despite significant progress in controlling the disease and access to different drugs to treat it, is increasing. In 2001, 8.7% of the population suffered from asthma which increased to 9.6% in 2009 and is predicted to increase to 400 million people by 2025 according to Centers for Diseases Control and Prevention (CDC) [2]. More women have asthma as compared to men and yet in children more boys are affected than girls [3]. The disease is caused by temporary and reversible airflow obstruction due to chronic inflammation of the lungs' airways and sensitivity to different stimuli [4]. According to intensity of the disease, children exhibit symptoms like coughing, wheezing, shortness of breath, or rapid breathing. Common medical treatment of asthma includes control of environmental factors, drug therapy, and patient education to achieve self-care skills [5]. Inhaled corticosteroids (ICSs) are considered as the first choice in the treatment of childhood asthma [4]. Despite the known effect of this drug, recurrent cough and wheezing are seen in 35% of children, such that in a third of the affected children, it leads to persistent asthma [5]. In the recent years, the use of therapeutic methods of complementary and alternative medicine (CAM) has increased, due to the chronic nature of asthma, the side effects of long-term use of chemical drugs, and popular tendency to adopt natural therapies [6]. About 20-30% of adults and 50-60% of children with asthma have used CAM methods at least once [7]. Children, who suffer from asthma with mild to moderate intensity, use these methods more than those suffering from more acute, intense asthma [8]. The most common methods used are breathing techniques, herbal products, homeopathy, and acupuncture though there is no strong evidence of the effectiveness of any of these methods in available studies [7]. Therefore it is important to scientifically evaluate and report traditional and complementary medicine practices and drugs with

effective therapeutic effect. The present study is a case study of a 12-year-old boy, whose persistent asthma was treated with the aid of the therapeutic methods of Iranian Traditional Medicine (ITM).

Case Presentation

Medical History and Examination according to Modern Medicine

The patient is 12-year-old boy, a known asthmatic case. He suffers from asthma for 4 years before he came for treatment at the traditional medicine clinic. He was a fifth grade student, born and brought up in Tehran till he was ten years old. Two years ago, his family moved him to Mahallat. His weight and height at the time of referral were 50kg and 155cm respectively. Onset of symptoms for the disease included a cold and cough and chest pain without shortness of breath. After chest radiography and spirometry test, the paediatrician diagnosed childhood asthma, and treated him with inhaled corticosteroids, ipratropium bromide, as well as in cases of need, salbutamol inhaler. Acetylcysteine was also given for a period of six months, because of the presence of sputum. During these four years, bronchodilator drugs such as cromolyn sodium, nedocromil sodium and montelukast tablets were also administered alternatively, but systemic corticosteroids were not prescribed. Other therapeutic measures have included avoiding allergens (the patient used to have pet birds at home before) and cold air.

The child was born by caesarean delivery, with a birth weight of 3,750 gr and was breastfed. He had food allergies and eczema, as well as positive family history of skin allergies in the mother, asthma in father, and their families. None of the family members were smokers. At the time of the disease diagnosis, the chest X-ray as well as the sputum test showed normal findings. In the spirometry test, his results indicated FEV₁ = 75%, FEV₁ / FVC = 0.88 respectively. The complete blood count (CBC) represented mild microcytic hypochromic anaemia with plasma haemoglobin electrophoresis indicative of thalassemia minor. The patient was classified as uncontrolled, according to GINA [9] classification.

Despite taking the mentioned treatments and

avoiding exposure to allergens, the symptoms became worse in the boy. The symptoms worsened upon eating spicy food, saffron, tomato paste, flatulent food, fast food and garlic, as well as on running, laughing, being angry, and when the season turned cold. Guided by a family acquaintance, he was brought to the traditional medicine clinic of the Tehran University of Medical Sciences.

Medical History and Examinations according to Iranian Traditional Medicine

The patient, in terms of the health preservation, respected some six essential principles of ITM. For example, the first principle relates to climate. His residence had been changed from Tehran to Mahallat, the city of Arak, to escape the high environmental pollution. In terms of eating and drinking, he did not respect the correct feeding practices. Wrong nutritional habits of the patient included meal irregularities, eating when not hungry and drinking water before and during meals, not chewing food well, eating fast and eating yogurt with food. Occasionally, when he went to sleep early, he woke up with bad dreams. He played badminton and football irregularly. He had constipation (defecation every other day), but his sweating was natural. Periodically, he had coughing bouts with relatively dense sputum. As for emotional states (mental symptoms), he mentioned anger, anxiety and obsessive compulsive disorder (OCD).

The patient's inherent temperament was hot and moist, according to the medical history and what the parents reported. In the patient's general symptoms at the time of referral, he was observed to be feeling hot and heat created trouble. For the little yellow colour of his face, in studies of conventional medicine, no cause has been found. The patient, sometimes when fatigued, had a frontal headache. He had no rhinorrhea. With activities in the morning, he had heart palpitations and mentioned chest pain in the right side, even at rest. On examination, compared to his age, he was average size. He had itching, rashes and hives on his back. Other physical examination was normal.

Treatment

According to the foundations and principles of ITM, the patient needed therapeutic measures that addressed the six essential principles, strengthened him physically, and reformed his lung temperament with oral and topical drugs.

Measures to Protect Health and Nutrition:

The therapeutic measures began on December 27, 2014. First, about respecting the six essential principles, the patient was provided with needed explanations, emphasizing his need to comply with appropriate dietary practices, proper sleep time (so that he did not sleep immediately after a meal), nap time, maintaining moderate level of physical activity and avoiding anxiety and stress that cause exacerbation of symptoms and asthma attacks. For correct nutrition, the patient was advised to avoid foods containing allergens, and to eliminate dense and slimy meals and foods producing phlegm (cold and wet foods) from his diet. He was also told not to drink cold water.

Pharmaceutical Measures:

According to the patient's temperament and symptoms, oral and topical herbal drugs were prescribed for the purpose of cleaning and adjustment of the lung temperament. To relieve his constipation, some drugs were prescribed as well, because constipation exacerbated existing symptoms caused by the treatment delay. The most important plants and drugs that were used during the treatment for the patient, under different conditions, are given in Table 1, and the contents of the combination drugs are provided in Table 2. In the first visit, he was prescribed Laxita® syrup 5 ml three to four times a day, 5 ml of Echibalm syrup per night and 5ml of Zataria plus syrup three to four times a day. Alongside, mixed powder of maidenhair (Parsiavoshan), anise (Anison), mastic (Mastaki), bitter almond, smarwort (Zaravand Modahraj), nettle seed (Gazane), tragacanth (Katira), and chest massage with asafoetida (Anqozeh) oil were prescribed. On the second visit after six weeks of treatment,

despite having suffered from two bouts of cold, the patient had no cough. He reported that his chest pain was much less, and the pressure on his chest about which he complained earlier was much less as well. In a challenge stress test that was performed after 45 days of treatment, FEV₁ / FVC = 80% was reported. The frequency of spray use (salbutamol, corticosteroids, ipratropium bromide) was less. His bowel movements had become regular, once to twice daily with a soft consistency, and his mother reported that his skin colour was better than before. According to the mother, there was 90% improvement and the patient believed that his improvement was to a miraculous extent. The patient was advised to continue the Laxita[®] syrup, mixed powder and asafoetida oil, and the dosage remained unchanged. The patient was advised to take 5ml of Zataria plus syrup with 5ml of Zoufa[®] syrup twice daily, and if the weather was cold, three times a day. The patient was also advised to add 5ml lavender syrup to Echibalm syrup every night. At this time, in addition to oral drugs and massage with oils, chamomile (Babooneh) fumigation was also added. The dose was 30 gr of chamomile flower per three litres of water, to be inhaled for 20 minutes. At the third visit that was 75 days later, his symptoms were less than before and the patient and his parents were satisfied with the therapeutic measures. The patient was advised to continue with the same dose of Laxita[®] syrup and mixed powder. He was told to continue with Zataria plus and Zoufa[®] syrup, to be taken with Bartang distillate and one Eylerzy capsule was added to his list of daily drugs. For food recommendations, he was advised to continue with the previous regimen, and was asked to include barley soup and rumen in his diet. The fourth visit was two months later and the patient was symptom-free, so his drug dosage was lowered. Only black seed (Shooniz) oil rub on the chest, for a week, was added to the treatment.

Treatment Results

A follow-up after a year and a half of the patient's last visit showed that he had no symptoms of the

disease. Even during exercise and exposure to cold air, he did not need any medicines.

Discussion

According to a review that has been published in 2016, so far there are only a few studies with a proper design that have examined the effect of plants on asthma and reported the results properly. But there was evidence that the simultaneous use of conventional and herbal drugs shows better results than using conventional drugs alone [10]. Another review, conducted in the same year, addressed other methods of complementary medicine in addition to medicinal plants. According to this review, studies done on Traditional Indian Medicine, homeopathy, and chiropractic still cannot lead us to a clear response about the effectiveness of these methods in asthma patients. But, in contrast, studies about acupuncture, massage, and osteopathy have been promising [6]. The reviews also failed to prove the effectiveness of yoga as a method of complementary medicine [11].

ITM, as one of the complementary medicine schools, provides numerous strategies for the prevention and treatment of diseases of different ages, including diseases in children. In ITM, adherence to six essential principles (Settehye-Zarurieah) is important for the treatment of various diseases. One of these six principles relates to the regional climate where a person lives. The best climate to preserve health is temperate air, between hot and cold, devoid of particles and pollutants [12]. In the case presented, before the start of treatment with ITM principles, the patient's symptoms were so severe that he had to live in Mahallat, away from his family. Mahallat is one of cities with the best climate in Iran, due to being on the hillside. It has greenery, farms of flowers and plants. It is away from malls and industrial plants polluting the air. Mahallat has hot springs, has temperate to a hot and dry climate, and therefore, it is proper for the patient and has helped reduce his symptoms and complaints.

The second of the six essential principles is the principle of eating, drinking and prescription of

Table 1. Prescriptions from 27 December 2014 to 27 August 2015

1st Prescription (27 December 2014)	<ul style="list-style-type: none"> • Laxita[®] Syr 5ml, TDS • Echibalm Syr 5ml, Qhs • Zataria Plus Syr 5ml, TDS • Asafeatida (Anqozeh) Oil • Mixed Powder of: Maidenhair (<i>Adiantum capillus - veneris</i>), Anise (<i>Pimpinella anisum</i>), Mastic (<i>Pistachia lentiscus</i>), Bitter Almond (<i>Prunus amygdalus var amara</i>), Smearwort (<i>Aristolochia rotunda</i>), Nettle Seed (<i>Urtica dioica</i>), Tragacanth (<i>Astragalus tragacantha</i>)
2nd Prescription (9 February 2015)	<p>Laxita[®] Syr 5ml, TDS Zataria Plus Syr 5ml + Zoufa[®] Syr 5ml, BD Chamomile (<i>Matricaria chamomilla</i>) Fumigation Echibalm Syr + Lavender Syr 5ml Continuation of Powder and Oil</p>
3th Prescription (25 April 2015)	<p>Zataria Plus Syr + Zoufa[®] Syr + Bartang Distillate Continuation of Laxita[®] Syr Continuation of Powder Eylerzy Cap Barley Soup and Rumen</p>
4th Prescription (27 June 2015)	<p>Zataria Plus Syr (Every Other Day)+ Zoufa[®] Syr + Bartang Distillate Continuation of Powder Nigella sativa Oil</p>

TDS: 3 times a day, Qhs: every bedtime, Syr: syrup, BD: 2 times a day, Cap: capsule.

Table 2. Content of Combination Drugs

Laxita [®] Syrup	Cassia fistula, Ficus carica, Vitis vinifera, Cordia myxa
Echibalm Syrup	Echium amoenum, Melissa officinalis
Zataria Plus Syrup	Zataria multiflora Boiss, Trochuspermum copticum, Ziziphus jujuba, Viola odorata, Solanum nigrum, Althaea officinalis, Adiantum capillus-veneris, Iris germanica, Echium amoenum Fisch, Foeniculum vulgura, Glycyrrhiza glabra, Matricaria recutita
Zoufa [®] Syrup	Echium amoenum, Viola odorata, Malva sylvestris, Ficus carica, Nymphaea, Honey
Eylerzy Capsule (Unani product)	Coral Compound, Zinc Compound

recipes, which is a main basis for the treatment. Today, also in nutritional sciences, the role of some nutrients in improving or exacerbating diseases has been considered. For example, in asthma, the risk of wheezing is reduced by 50% following consumption of nuts, while olive oil and margarine double the risk [13]. There is no consensus on the effect of dairy consumption on asthma yet. Some studies consider milk to increase the production of mucus and some consider it reduces wheezing [14, 15]. For this patient, according to the symptoms and causes of the disease, dietary solutions were provided on the basis of ITM. He was made to avoid cold and moist food such as cold water, yogurt, buttermilk and some fruits, and was recommended barely soup. This diet cleaned his lungs and relieved cough and chest pain.

Asthma in conventional medicine is largely consistent with *rabv* and *bohr* in ITM medicine. According to the *rabv* approach, in the first step, the Participatory causes of the disease should be excluded [16]. In this patient's review, except for constipation, there was no other serious problem, so the disease cause was considered to involve the lungs. Also, the presence of dense mucus that obliged the patient to use mucolytic drugs and worsening of symptoms with cold weather, presented the diagnosis of cold and moist distemperament (*sue-e-mezej*) of lungs. According to ITM, the treatment base in this case involves Consolidation equilibration of the humors (*nozdg*) generally and dilution of thick humors (*taltif*), then dissolution (*tahlil*) and gradual elimination (*tanghieh*) of them, indeed clear obstructions (*taftih*) and finally, adjusting the lung temperament [16, 17].

For Consolidation equilibration, drugs with hot and dry temperament with significant pulmonary efficacy were selected. Intense heat causes moisture to dry up and stay in the lungs, so care was taken to balance against that. For intestinal cleansing, a strong purgative was not prescribed. Diarrhea was carefully and gradually induced, so that in addition to resolving the problem of constipation, evacuation of waste materials was done (cassia, figs, and borage in the diet helped).

The drugs were chosen so they would have additional pulmonary effects. For example, figs cleanse the lung mucus and are useful for cough, and borage is useful both for cough and dyspnea [18]. In new studies, some borage species (*Borage* and *Echium plantagineum*) also have showed positive effects on reducing the contraction of bronchial smooth muscles [19]. *Thymus vulgaris*, *maidenhair*, *anise*, *mastic*, *bitter almonds*, *smearwort* and *nettle seed* were the other drugs prescribed in the first session. ITM specifies that, in addition to have dilution, dissolution, phlegm fragmentation and dryness, polishing and clearing obstruction effects, all the drugs mentioned have significant pulmonary effects such as cleansing of the chest, lung and trachea, they are beneficial for *rabv* and chronic cough too [18]. A study conducted in 2013 showed that the extract of thyme (*Zataria multiflora boiss*) by reducing IL-4 and the balance of Th1/Th2 had therapeutic and anti-inflammatory effects on diseases with inflammatory responses, such as allergies and asthma [19]. Also, ethanol extract of *maidenhair* (*Adiantum capillus - veneris*) inhibits the production of inflammatory mediators [20]. One method of drug prescription for therapeutic purposes is topical oil that is extracted from various plants. Since drug delivery through the skin is a proper and convenient way that has been used in ITM [21-22], chest rub with proper oil was prescribed, indeed fumigation in this case. Regarding the patient's significant improvement after the first treatment, the same treatment approach was adopted and similar drugs were used with the above effects. Like any other conventional medicine, ITM considers asthma as a periodic disease, which in the absence of symptoms should not be ignored [16]. Therefore, despite significant improvement of the patient in the first two sessions, the traditional medicine treatments continued for several more months.

Conclusion

Given that asthma is a major cause of school absences across the world that have significant load for patient and society, its correct treatment without any side effects is very important. One

of the effective ways to treat this disease is the use of complementary and Alternative medicine, including traditional medicine and herbal drugs. The use of medicinal plants could reduce airway sensitivity and provide better control of asthma. In addition, the therapeutic methods of traditional medicine could prevent the indiscriminate use of common drugs and as a complementary therapy, can be combined with conventional drug therapies. So, conducting strong studies to examine the effectiveness of medicinal plants on the treatment of asthma, particularly in children, is required.

List of Abbreviations

CAM: Complementary and Alternative Medicine
 CBC: Complete Blood Count
 CDC: Centers for Diseases Control and prevention
 Cm: Centimetre
 FEV1: Forced Expiratory Volume during 1th second
 FVC: Forced Vital Capacity
 GINA: Global Initiative for Asthma
 gr: gram
 ICSs: Inhaled CorticoSteroids
 Kg: Kilogram
 OCD: Obsessive Compulsive Disorder

Competing Interests

The authors have no conflict of interest in the publication of this paper.

Contributing Authors

This article is the outcome of treatment measures by MK, MSP, MSM and cooperated in documenting and writing the article.

Acknowledgments

The authors of the paper appreciate the cooperation of the patient and his family in providing the history and completing the treatment process.

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