International Journal of Advances in Health Sciences (IJHS)
ISSN 2349-7033
Vol2, Issue2, 2015, pp180-186
http://www.ijhsonline.com

Research Article

Preliminary study to investigate the efficacy of *Zoofa – e - Yaabis* (*Hyssopus Officinalis* Linn) in stable cases of Bronchial Asthma

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[Received-16/03/2015, Accepted-24/03/2015]

ABSTRACT:
Bronchial asthma *(Zeequn-nafs Shobi)* is well known illness since ancient era. The word Asthma is derived from Greek language, which means “noisy breathing” or making blowing noise or panting. It is defined as "Chronic infective disease of airway that is characterized by increase responsiveness of the tracheobronchial tree to a multiplicity of the stimuli". It affects 5% to 10% of the world population. It is still a major challenge to treat in conventional stream of medicine. Only a symptomatic conservative treatment is available, thus as of today, a thrust area for research in every field of medical science. Unani physicians claimed to possesses many safe and effective herbs for management of asthma which have the properties of bronchodilator, expectorant and mucolytic. Hence preliminary an open perspective clinical trial was designed to evaluate the efficacy of *Zoofa-e-Yaabis (Hyssopus Officinalis)* in stable cases of bronchial asthma. 60 cases of either gender between the age group 20 - 60 years were treated for 90 days. Enrolled subjects got satisfactory relief in their signs and symptoms after 90 days. Hence, it can be concluded that test drug *Zoofa- e-Yaabis (Hyssopus Officinalis)* has the potential to significantly reduction in clinical signs and symptoms with considerable reduction in laboratory parameters. .

Key words: *Zeequn-nafs Shobi*, Bronchial asthma, *Zoofa- e-Yaabis*, *Hyssopus Officinalis*

INTRODUCTION:

Lungs perform the vital function of the body, and plays basic roll in vitality. Bronchial asthma is a disease which affects these important functions of the lungs on which the human life depends.[1- 4] It is defined as "Chronic infective disease of airway that is characterized by increase responsiveness of the tracheobronchial tree to a multiplicity of the stimuli".[5-6] It is manifested physiologically by a widespread narrowing of the air passage which may be relieved spontaneously or as a result of therapy and clinically by paroxysms of dyspnoea, wheezing and cough. [7 - 10] it is an episodic disease with acute exacerbation interspersed with symptom free period. Typically the patient seems to recover completely after an attack [11 -13]. However there can be a phase in which the patient experiences some degree of airway

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obstruction daily. This phase can be mild, with or without superimposed severe episodes, or much more serious, with severe obstruction persisting for days or weeks and the latter condition is known as status asthmaticus[14-18]**.** In unusual circumstances acute episodes may also cause death. In chronic condition, complicating bronchial asthma leads to pneumothorax, pneumomediastinum, and adverse effects of medications used to treat this disease [19-21]. The mainstream conventional system of medicine has so far only been able to offer a transient, symptomatic relief with recurrence of symptoms. In both acute and chronic conditions, it is still a major challenge to treat in main stream of medicine [22-25]. Asthma related hospitalizations increased 50% in adults and more than 200% in children in the United States [26-29] while in India its increases by double folds.As per the survey conducted and published in 2005 by Agarawal A.N *et al*, asthma was present in 2.28%, 1.69%, 2.05 and 3.47% of a total of 73605 respondents respectively at Chandigarh, Delhi, Kanpur and Bangalore, with an overall prevalence of 2.38% [30-34].

The word Asthma is derived from Greek language, which means “noisy breathing” or making blowing noise or panting [35]. Bronchial Asthma in Unani medicine is termed as *"Zeequn-nafs Shobi"* in which the word *"Zeeq"* means "narrowing", *"Nafas"* means "breathing" and the word *"Shobi"* means "bronchial". *"Dama"*, *"Rabu"*, and *"Buhar*” are other terms used for this condition [36-40]. The father of medicine *Buqraat* (Hippocrates), Jalinoos (Galen), *Razi* (Razes), *Ibn e Sina* (Avicenna) have mentioned different aspects of disease. In *Al Qanoon Fil Tibb* (Canon of Medicine), Avicenna made his observation and concluded that some individuals may always sneeze in the presence of certain flowers and plants though they may not aware of the scientific and pathological reasons behind it. Hence the Avicenna has been coin the basic concept of allergic asthma, its definition, detail description regarding pathogenesis, aetiology, signs and symptoms etc.

The Unani physicians claim to posses many safe, economic and efficient single and poly-pharmaceutical preparations for the management of Bronchial Asthma. But in standard pharmacopeia (*Qarabadeen)* the scientific evaluation of described effects of different drugs have not been mentioned. Hence it could be suggested to have priority in scientific research not only to validate the prescribed effects of these drugs but to develop safe, easy, economic and efficient treatment for Bronchial Asthma. One such drug is *Zoofa-e-Yaabis (Hyssopus officinalis)*, described in pharmacopeia (*Qarabadeen)* as bronchodilator, expectorant, mucolytic and useful in respiratory diseases. In light of these properties, it has been also used for the management of *Zeequn-nafs Shobi* (Bronchial Asthma) by various Unani philosophers [41- 45].

MATERIAL AND METHODS:

An open perspective clinical trial was conducted to evaluate the efficacy of *Zoofa- e-Yaabis (Hyssopus Officinalis)* on 60 patients of either sexes between the ages group 20 -60 year, known stable cases of Bronchial Asthma who attended the OPD of Z.V.M. Unani Hospital and Research Centre Pune, while those who had episodic acute asthmatic attack, history of major heart disease, renal diseases, diseases of the liver, pregnant and lactating females and those who required hospitalization due to severe attacks of asthma were excluded from the study. The proposed research project was approved by Institutional Ethical Committee. Each patient was subject to detailed history, physical examination, clinical presentations e.g., cough, dyspnoea, wheeze etc., radiological findings (Chest X-ray) and laboratory investigations were recorded in the prescribed case report form.

The patients were administered *Zoofa- e-Yaabis (Hyssopus Officinalis)* in powdered form in dosage of 10 gm BD after meal, with water for 90 days while those patients who get mild to moderate episode of asthmatic attack were inhaled the decoction of crude herb of *Zoofa* at the time of attacks. For the inhalation the patient were directed to make *Zoofa- e-Yaabis*

(Hyssopus Officinalis) decoction and inhale the vapours of the same with regular follow-up as 0 day, 30th day, 60lh day, and 90th day. No concomitant treatment was allowed during this period and patients kept under strict observations. Findings were depicted in tables and self explanatory graphs.

Criteria for selection of *Zoofa-e-Yaabis (Hyssopus officinalis Linn):*

The test drug is selected after the thorough review of the ancient Unani literature related with the treatment of bronchial asthma. The drug described as anthelmintic, expectorant, mucolytic, bronchodilator, laxative etc and useful in many conditions like inflammatory condition of respiratory tract, paralysis, chronic bronchitis, inflammation of lungs, asthma, muscular pain, chest and the liver diseases etc,. Its gargles are good for strengthening the teeth and gums. The major constituents found in *Zoofa- e-Yaabis (Hyssopus Officinalis)* are isopinocamphone 38.1, Pinocarvone 20.3, 1-8 cinol 12.2, B-PicinelO.2 while others are germacrene.D, Bicy — clogermacrene, Cuminaldehyde, 2-hexone 3- octane furfural, Salicylaseuremetthyle ester, Cugenol, Thymol, Terpinolene, Alpha – tepinolene, Benrol, Traces of benzaldehyde [46]. The drug was procured from well known centre of Unani medicine "Herbs & Hakim" M.G Road, Pune and verified and authenticated by Alana Pharmacy College, Azam campus Pune.

STATISTICAL METHODS:

Data was collected and transformed into an excel sheet. For comparing the significance of difference of average values of quantitative variables before and after the intervention, wilcoxon's signed rank test, a non-parametric technique was applied for within group comparison.

RESULTS:

1. Distribution according to Age & Gender:

Age (year)	Number & % of Male	Number & % of Female	Total number & %.
20-30	3 (5%)	7 (11.66%)	10 (16.66%)
31-40	5 (8.33%)	15 (25%)	20 (33.33%)
41-50	10 (16.66%)	15 (25%)	25 (41.66%)
51-60	2 (3.33%)	3(5%)	5 (8.33%)
Total	20 (33.33%)	40 (66.66%)	60 (100%)

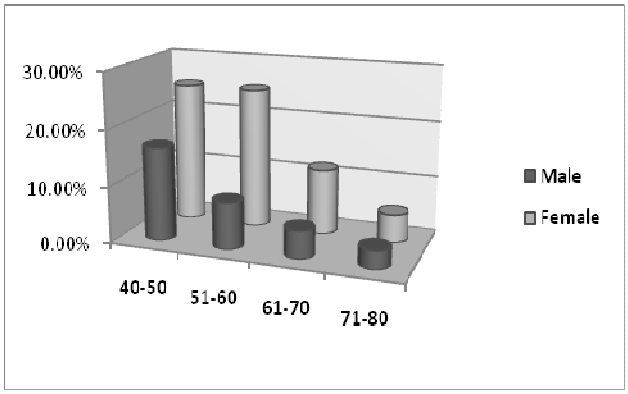

Table-1: Demonstrated the incidence of Bronchial asthma was higher in age group of 41-50 years with peak 25 % of female gender.

2. Distribution of patients according to Diet:

Sr. No.	Diet	No. of Patients	Percentage
1	Vegetarian	22	36.66%
2	Non-Vegetarian	38	63.33%

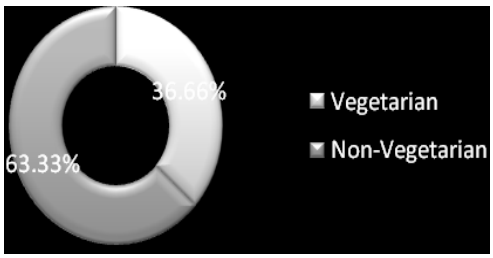

Table-2: Demonstrated the **i**ncidence of bronchial asthma was higher 63.33% in omnivores even vegetarian who are taking much of milk and pure ghee are also not safe.

3. Distribution of the patients according to Temperament:

Sr. No.	Temperament	No. of Patients	Percentage
1	Phlegmatic	33	55%
2	Black bile	7	11.66%
3	Sanguineous	13	21.66%
4	Bilious	7	11.66%
5	Total	60	100%

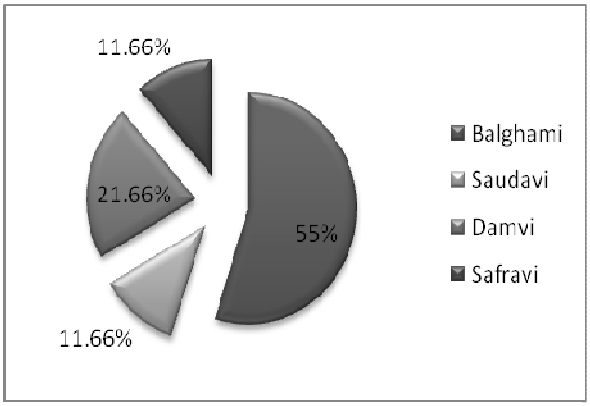

Table-3: Demonstrated the **i**ncidence of bronchial asthma was higher 55% in phlegmatic temperament followed by sanguineous temperament 21.66%.

4. Distribution of the patients according to Addiction:

Habits	Tobacco	Smoking	Alcohol
Absent	49 (81.66%)	34 (56.66%)	51 (85%)
Present	11 (18.33%)	26 (43.33%)	9 (15%)
Total	60 (100%)	60 (100%)	60 (100%)
P - value	0.739	0.999	0.278

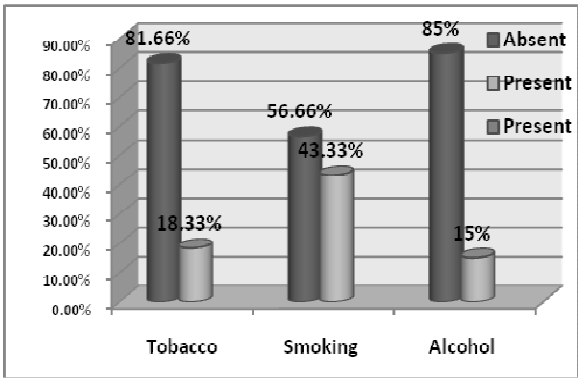

Table-4: 18.33% and 43.33% patients having habit of Tobacco and smoking respectively. Only 15% patients were habitual alcoholic while 85% were non alcoholic.

5. Comparison of signs and symptoms before and after the intervention:

Sign and Symptoms	Comparison			
	No. of patients with clinical presentation		No. of patients got relief	
	Before	%	After	%
Productive Cough	**60**	**100**	**58**	**96.66**
Wheez	**53**	**88.33**	**50**	**83.33**
Paroxysmal Dyspnoea	**57**	**95**	**51**	**85**

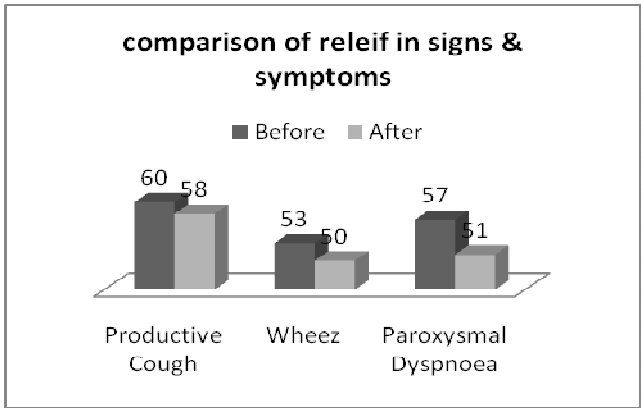

Table -5: Demonstrated the comparison in signs and symptoms before and after intervention of test drug.

DISCUSSION:

In (Table-1), the higher incidences were observed in age group 41-50 years females. It shows that age group 41 -50 years females are prone to get suffer from Bronchial Asthma also support with Unani text that, this type of asthma generally seen after the age of 40 years [47]. Thus the finding of study is coinciding with the description in Unani text. In (Table -2), it was found that the incidence of bronchial asthma was higher 63.33% in omnivores even vegetarian who are taking much of milk and pure ghee are also not safe.

In (Table -3), it was observed that incidence of bronchial asthma was higher in Phlegmatic temperament cases (55%), followed by sanguine temperament (21.66%) and bilious and black bile temperament (11.66%) respectively, which is also support the description mentioned under the heading of Zeequn-nafs in Unani text. In (Table -4), it was observed that 18.33% and 43.33% patients having habit of tobacco and smoking respectively. Only 15% have habit of Alcohol drinking and 85% do not have habit of alcohol drinking which reveals that the Bronchial asthma is more prevalent in smokers[48]**.** As *John. A.A. Hunter* described in Davidson's Principle and Practice of Medicine that "It may due to passive exposure to cigarette smoke immediately following birth increases the risk of developing asthma."

Bronchial asthma is one of the commonest respiratory illnesses characterized by increased responsiveness of the tracheobronchial tree to a

multiplicity of stimuli. It manifests physiologically by a widespread narrowing of airways and clinically by paroxysms of dyspnoea, cough and wheezing (Table & Graph-5). In present study, it was observed that all the included subjects were had the complaints of productive cough (mild to moderate). Hence after completion of the trail all the cases got significant relief, which may due to ani tussasive and expectorant effect of Z*oofa- e-Yaabis (Hyssopus Officinalis)* mentioned in classical texts.[41-45]. It was observed that 57 (95%) cases were had the history of paroxysmal dyspnoea at base line. After intervention of test drug 51 (85%) cases were shown significant decrease in dyspnoeic condition while rest of the cases decreases the frequency and severity of dyspnoea, may due to anti-inflammatory and expectorant effects of the test drug [27-29.]

It was also observed that 53 (88.33%) cases were had the history of wheezing and ronchi at base line. After intervention of test drug only 50 (83.33%) cases were shown significant decrease in wheez and ronchi on auscultation while rest of the cases decreases its severity, it may due to anti-inflammatory, mucolytic action of the *Zoofa- e-Yaabis (Hyssopus Officinalis)* [41-45]

After the significant decrease in all commonly observed symptoms of bronchial asthma, decrease in ESR also observed after intervention of test drug. Eosinophils are considered to be the major inflammatory cells increases in the allergic condition of the body, in an allergic infection it becomes elevated to some extent. The trial reveals that after 90 days of treatment with the Z*oofa- e-Yaabis (Hyssopus Officinalis)* eosinophil count was not found to be significantly decreased. However in patients with increased eosinophil count higher than normal was found to reduce the eosinophil count to normal values.

As Chest radiographic imaging is the initial imaging evaluation in most individuals with symptoms of asthma. The value of chest radiography is in revealing complications or alternative causes of wheezing and the minor importance of wheezing in the diagnosis of asthma and its exacerbations. It usually is more useful in the initial diagnosis of bronchial asthma than in the detection of exacerbations, although it is valuable in excluding complications such as pneumonia and asthma mimics, even during exacerbations. In present study all patients were screened out for the postero-anterior chest radiograph (CXR-PA view) and maximum cases were demonstrated Increased bronchial wall markings (most characteristic) associated with thicker bronchial wall, inflammation, hyperinflation, and focal atelectasis suggest asthma when they are present. After completion of the trial CXR-PA view was not revealed any significant changes.

Apart from the above investigations Hb%, TLC, DLC, Liver Function Test, Kidney function test were also performed for the safety parameters. However there is no significant change were observed in said parameters while compared before and after the intervention of test drug which demonstrate that the test drug is safe and effective in cases of bronchial asthma.

CONCLUSION:

Hence it may concluded that Z*oofa- e-Yaabis (Hyssopus Officinalis)* was found to be effective in relieving the sign and symptom in stable cases of bronchial asthma, this study adds information for expectorant, antitussasive, mucolytic, anti inflammatory, and bronchodilator effects of this traditional herb while additional comparative randomized clinical trial on large sample size is further required according to extensive scientific parameters.

ACKNOWLEDGEMENT:

Authors are thankful to ZVM Unani Medical College & Hospital Pune, Maharashtra for extending their help to perform the clinical studies.

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