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Response of Herbal Medicine to the Withdrawal of Bronchodilators and Corticosteroids in Bronchial Asthma (*Zeequn Nafas*) Patients

Irfat Ara, Seema Akbar, Mohammad Naime and Syed Basahrat Bukhari

Regional Research Institute of Unani Medicine, Hazratbal, Srinagar, Jammu and Kashmir, India

Correspondence should be addressed to Irfat Ara, drirfat@yahoo.com

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Abstract Despite intensive ongoing research all over the world, satisfactory and safe treatment of *Zeequn Nafas* (Bronchial Asthma) still defies the modern medical world. Long-term use of corticosteroids and bronchodilators leads to suppression of immune system and other disorders. The present study was conducted to see the response of herbal formulation to the withdrawal of bronchodilators and corticosteroids and to see the efficacy of herbal drug in bronchial asthma.

Keywords *Herbal; Bronchial Asthma; Lung Function; Vital Capacity; Wheezing*

1. Introduction

Zeequn Nafas is diffused involvement of Bronchial system due to variety of influences resulting in chronic respiratory disability. This respiratory disability or Zeeq-un-Nafas (Bronchial Asthma) covers a broad clinical spectrum, ranging from readily reversible, and bronchospasm to severe chronic intractable obstruction to airflow. *Zeequn Nafas* is mentioned by the ancient physicians and philosophers like *Buqrat* (Hippocrates - 460 BC) and *Jalinoos* (Galen - 120-200 AD). *Buqrat* called this disease breathlessness or panting. Majoosi has also mentioned this disease in his book *Kamil-us-Sana* with reference to *Buqrat* and *Jalinoos*. Unani scholars have mentioned this disease under different headings in their treatises e.g. *Rabw*, *Buhar*, *Dama*, *Intasabun-Nafas*, etc. (Tabari, 1928; Razi, 1957; Ibn Sina, 1906; Majoosi, 2010; Jurjani, 1289H; Khan, 1978; Kabiruddin, 1960). *Zeequn Nafas* is a condition in which difficulty in breathing is caused due to accumulation of *Balgham Lazuj* (Viscous Phlegm) in *Urooq Khashna* (bronchioles).

In modern medicine *Zeequn Nafas* is described under the heading of bronchial asthma. The word Asthma is derived from Greek word meaning short drawn breath, panting or labored breathing. Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role. The chronic inflammation is associated with airway hyper responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or in the early morning. These episodes are usually associated with wide spread, but variable, air flow obstruction within the lung that is often reversible either spontaneously or with treatment (Kumar &

Clark, 2004; Stein, 1998). It has been identified as one of the five most pressing global lung problems (Barnes, et al., 1996). The prevalence of asthma is rising and 5-9% of general population in India is suffering from Bronchial asthma (Gupta, et al., 1999).

Bronchial asthma can be defined as a chronic inflammatory disorder of the airways, characterized by recurrent episodes of wheezing, breathlessness, chest tightness and cough that is often reversible, either spontaneously or with treatment. Different terms such as allergic or asthmatic bronchitis, wheezy bronchitis, intrinsic and extrinsic asthma are frequently employed in clinical practice.

2. Materials & Methods

2.1. Centre of Study

The study was carried out at Regional Research Institute of Unani Medicine, Srinagar. Total numbers of 2559 patients were registered from the general out patients department (GOPD) of the institute.

2.2. Subject Selection

Patients having breathlessness along with one or more of the following complaints were selected for the study

- Wheezing
- Tightness of chest
- Cough
- Cough with expectoration
- Impaired Lung Function Test

2.3. Inclusion Criteria

Patients with breathlessness, cough, and cough with expectoration, wheezing, of either sex age group between 10-70 years and also patients who were cortisone dependent and also using bronchodilator were included in the study.

2.4. Exclusion Criteria

Patients having COPD, Koch's infection, bronchiectasis pleuresy, endocrinological disturbance, chronic renal failure, pregnancy were excluded from the study.

2.5. Investigations

The following investigations were conducted for the inclusion, exclusion, grading of the patients and for the assessment of the efficacy of the test drug.

- Chest X-ray
- Lung function Test
 - Hematological and Biochemical Tests
 - Hb, TLC, DLC, & ESR
- Sputum test for AFB
- Blood Sugar
 - Fasting

- Post Prandial
- Stool (Routine & Microscopic)
- Urine (Routine & Microscopic)
- E.C.G.

Drug Zn5 is an herbal formulation in the form of *Majoon* (Semi-solid preparation) containing Seer (*Allium Sativa* Linn.); Karanjwa (*Caesalpinia bonducella* Flem.); Hulba (*Trigonella foenum-graecum* Linn.); Katan (*Linum usitatissimum* Linn.); Chillbeenj (*Strychnos potatorum*); Karanj (*Pongamia pinnata* (Linn.) Pierre) and Honey. Zn5 was prepared and supplied by the pharmacy at Central Research Institute of Unani Medicine (CRIUM), Hyderabad. Most of the ingredients used in Zn5 are *Munaffis-e-Balgham* (Expectorant) and *Mukhrij-e-Balgham* (Phlegmagogue) (Ghani, 1998; Nabi, 1932; Lubhaya, 1977). Standardization and toxicity studies of drug Zn5 were conducted at DSRU, Srinagar.

2.6. Dosage

Coded Unani formulation Zn5 *Majoon* (Semi-solid preparation) was given in the dose of 10 gm twice daily with lukewarm water.

2.7. Duration of Protocol Therapy

Twelve weeks.

2.8. Sample Size

Two thousand five hundred and fifty nine (2559) cases of *Zeequn Nafas* were studied.

2.9. Parameters for Assessment of Safety

A. Clinical

Adverse event if any;

B. Laboratory

Biochemical and pathological parameters (Haemogram, LFT, KFT, etc.)

2.10. Parameters for Assessment of Efficacy

A. Clinical

Two thousand five hundred and fifty nine (2559) cases of *Zeequn Nafas* were registered for the study from the OPD of Regional Research Institute of Unani Medicine, Srinagar. Besides recording a thorough history, the cases were clinically examined and routine investigations conducted. Grading of the patients was done, and they were classified as per age, sex and duration of the diseases. The severity of the bronchial asthma was evaluated by spirometry. The study was designed to see the efficacy of Zn5 in improvement of clinical signs and symptoms with state of withdrawal of broncho dilators and corticosteroids.

The drug Zn5 was given to patients as per dosage. Follow-up of the patients were done on four, eight and 12 weeks of treatment. After the completion of duration of therapy the patients were assessed at 1-2 weeks intervals up to next four weeks.

3. Observations and Results

The detailed findings subjective and objective response and other observations were recorded during the study.

3.1. Age and Sex Distribution

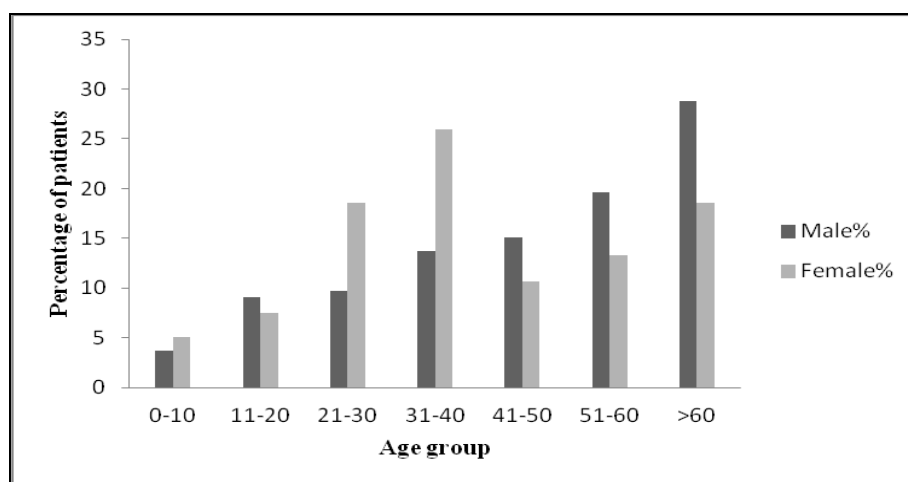


Figure 1: Age and sex distribution of the study population

The Figure 1 shows the incidence of *Zeequn Nafas* increasing gradually as the age advances. The highest incidence has been recorded in the age group of more than 60 years. At this juncture, we can conclude that the elderly suffer more than the youngsters. Out of the 2559 patients registered, 51.02% were male and 48.98% female, indicating that the occurrence of the disease is slightly higher among males (Figure 1).

3.2. Occupation

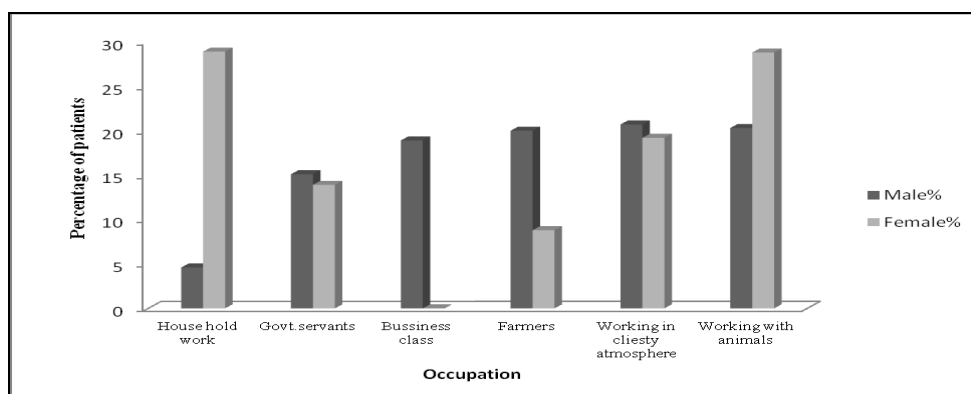


Figure 2: Distribution of patients according to occupation

In the study it was found that females working with animals and in household jobs are more prone to the disease in comparison to males, whereas male farmers, business class, working in cliesty atmosphere and government sector are more prone than the females (Figure 2).

3.3. Duration of Chronicity

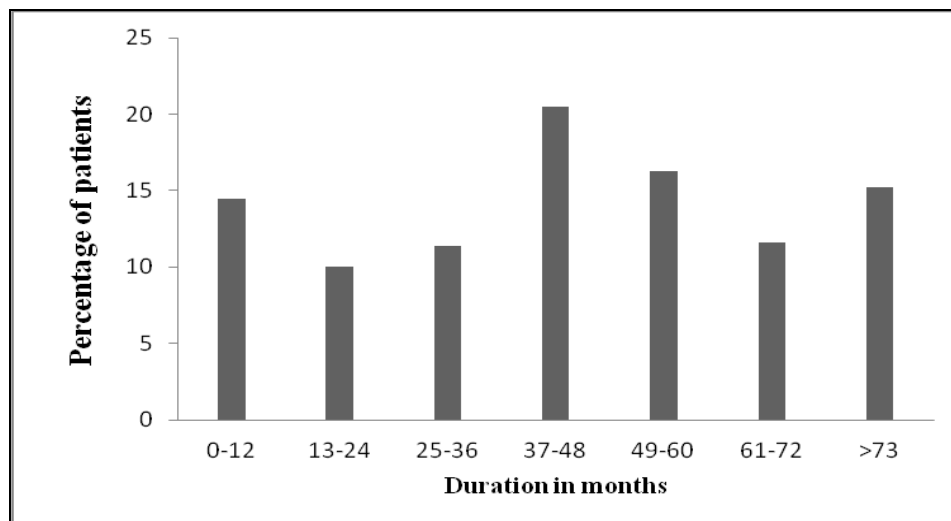


Figure 3: Distribution of patients according to duration of chronicity

The Figure 3 shows that all the cases were chronic bronchial asthma and none was of acute origin. Among 2559 cases 20.0% cases were having the duration of chronicity of 37 to 48 months followed by 16.3% cases having 49 to 60 months chronicity.

3.4. Safety Evaluation of Coded Unani Formulation Zn5 in Zeequn Nafas Patients

There was no change in pathological and biochemical markers before and after the intervene of Zn5.

3.5. State of Withdrawal of Bronchodilators and Cortisones

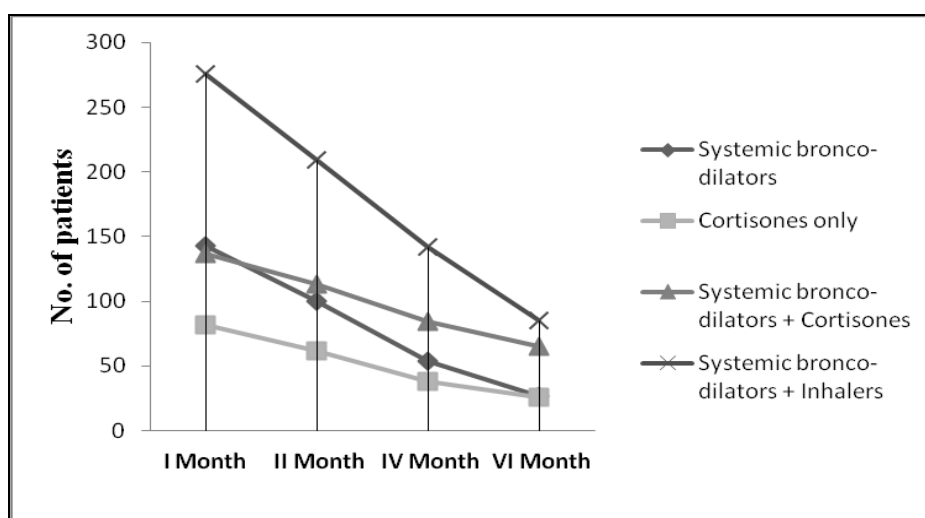


Figure 4: Distribution of patients on status of withdrawal of bronco-dilators and corticosteroids

Figure 4 shows that out of the 2559 patients, 1778 (69.48%) patients used Bronco-dilators and Cortisones or both at base level. After completion of protocol therapy it was found that 79.13% patients had withdrawn the use of bronchodilator and cortisones.

3.6. Sex-Wise Response of Zn5 in Zeequn Nafas Patients

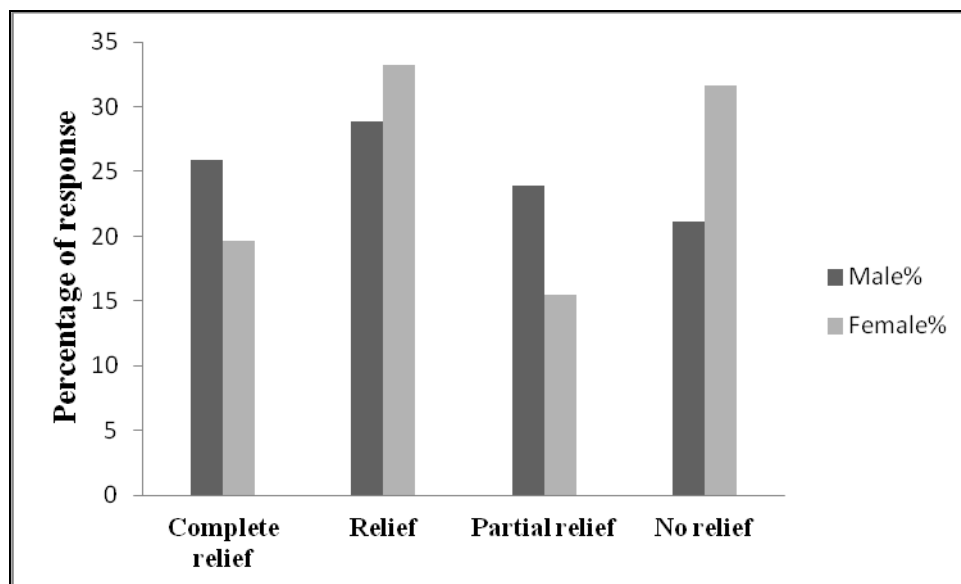


Figure 5: Sex-wise response of Zn5 in Zeequn Nafas patients

Out of the 2559 patients which completed the protocol therapy, 54.8% males and 52.9% females got relief, 23.9% males and 15.5% females got partial relief in their signs and symptoms, while 21.2% males and 31.6% females did not get significant relief in their sign and symptoms.

3.7. Over All Response of Zn5 in Zeequn Nafas Patients

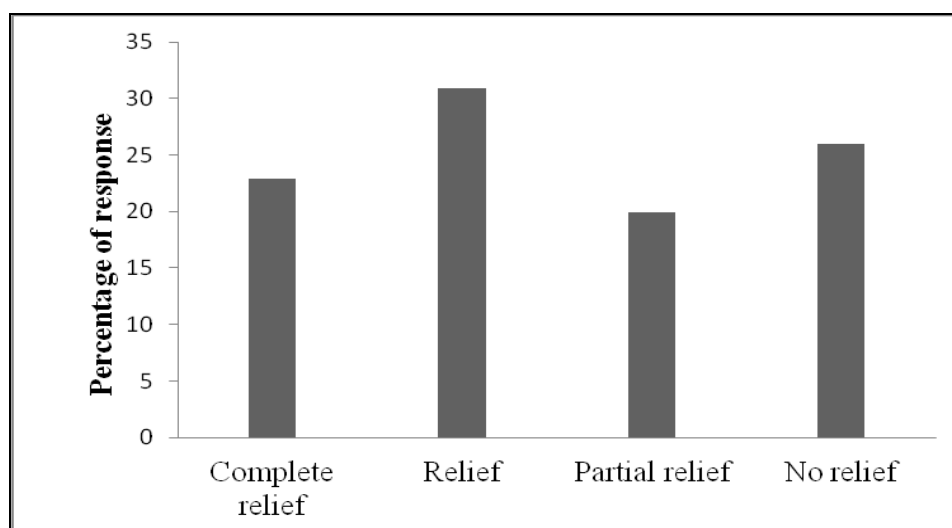


Figure 6: Over all response of Zn5 in Zeequn Nafas patients

In the Figure 6, it was found that 54% patients got relief, 20% patients got partial relief in their signs and symptoms, while 26% patients did not respond to the therapy.

The criteria used for the assessment of relief were as follows:

1. Relief = 100-70% regression in symptoms
2. Partial Relief = 71-40% regression in symptoms
3. No Relief = < 40% regression in symptoms

4. Discussion and Conclusion

2559 patients were registered, out of which 1778 (69.48%) patients used bronco-dilators and cortisones. After completion of protocol therapy, it was found that 1407 (79.13%) patients had withdrawn the use of bronchodilator and cortisones. The ingredients of this coded Unani drug are *Munaffis-e-balgham* (Expectorant), *Mukhrif-e-balgham* (Phlegmagogue), *Daf-e-Sual*, *Daf-e-Humma*, *Muhallil-e-Auram*. The drugs having these properties are said to be effective in the management of *Zeequn Nafas* (Ghani, 1998; Nabi 1932; Lubhaya, 1977). Zn5 significantly reduces the use of bronchodilator and cortisones after completion of therapy. No adverse effects have been observed except gastric irritation in some cases.

In light of the above observation and discussion, it may be concluded that the coded Unani formulation Zn5 successfully reduces the symptoms and signs of the disease and helped in withdrawal of cortisones and bronchodilators. It may also be concluded that the Unani formulation Zn5 acts as *Munaffis-e-Balgham* (expectorant) possibly *Mufatteh Urooq-e-Khashna* (Bronchodilator) and antihistaminic.

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