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An Exploratory study of efficacy of Aslussoos (Glycyrrhiza glabra Linn)) in Chronic Bronchitis (Muzmin iltehab sho'b)-A Cohort Study

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ABSTRACT

Chronic bronchitis (Muzmin Iltehab Sho'b) is a major respiratory condition characterized by persistent cough and sputum production for at least three months in two consecutive years. It commonly affects individuals exposed to smoking, dust, fumes, and environmental pollutants. Modern pharmacological treatments often provide symptomatic relief but are limited by adverse effects and cannot be used safely for long durations. Unani medicine describes chronic bronchitis as a condition arising from accumulation of viscid phlegm in bronchi, and traditionally recommends demulcent, expectorant, and anti-inflammatory herbs like Aslussoos (Glycyrrhiza glabra Linn). The present open-label, randomized cohort study evaluated the efficacy of Aslussoos in 30 clinically diagnosed patients aged 40–60 years. Patients received Sufoof-e-Aslussoos (3 g twice daily) for 30 days. Assessments included clinical symptoms, spirometry, and hematological investigations. The therapy showed encouraging results, particularly in reducing cough, sputum production, and breathing difficulty, with no adverse effects reported. The study validates Aslussoos as a safe, beneficial option for managing chronic bronchitis within the framework of Unani medicine..

Keywords: *Chronic Bronchitis; Muzmin Iltehab Sho'b; Aslussoos; Glycyrrhiza glabra; Unani Medicine; Expectorant; Demulcent; Sufoof; Respiratory Diseases; Clinical Trial*

1. INTRODUCTION

Introduction of Chronic Bronchitis (Muzmin iltehab sho'b)

Chronic bronchitis is defined as a disease characterized by hyper secretion of mucus sufficient to cause cough and sputum on most days for at least three months in a year for 2 or more consecutive years. This happens in the absence of any other specific respiratory or cardio vascular disease. It may be Simple with mucoid expectoration, Mucopurulent with present or intermittent mucopurulent expectoration or Obstructive with persistent widespread narrowing of airways and increased resistance to airflow during expiration.1,2,3,.

Chronic bronchitis occurs most commonly in adult males. Males are affected 5-6 times more than females. It is often seen in those belonging to lower socio-economic class. It affects city dwellers, factory and mine workers. It is more common in smokers than nonsmokers. Bronchial irritation is caused by environmental atmospheric pollution due to smoke or fog, dust and fumes, household air pollution from kitchen smoke and personal habit of smoking. All these acts as irritating factors in hypersecretion of mucus in the bronchial tree.[1,2,3,9,10]

Clinical and pathological studies have revealed a close relation between cigarette smoking and chronic bronchitis. Excessive cigarette smoking impairs ciliary activity of bronchial mucosa and bactericidal action of macrophages thus exposing the bronchial tree to the direct effects of inhalants and infection.

It produces bronchial spasm resulting from irritation of bronchial mucosa. Atmospheric pollution and smoking lower the resistance of the bronchial mucosa.[1,2,3,9,10,]

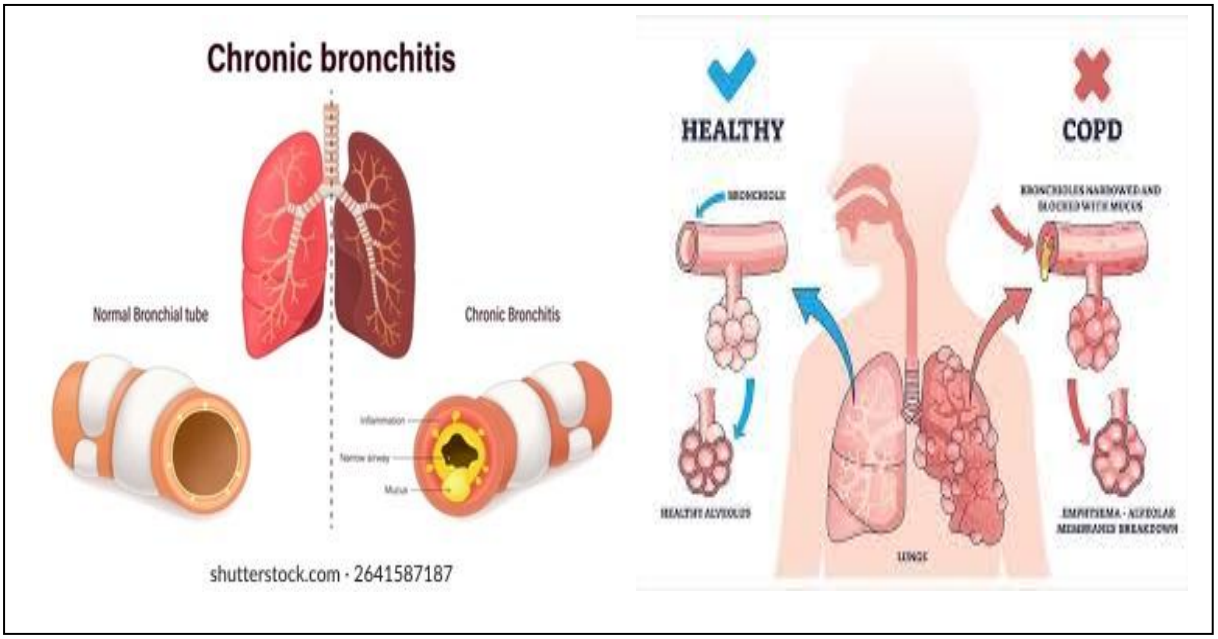


Fig. 01 Chronic Bronchitis (Muzmin iltehab sho'b)- A Seviour Respiratory tract infection in male and female

The disease chronic bronchitis (*Muzmin iltehab sho'b*) also well known in Unani system of Medicine. The Unani concept on chronic bronchitis is the conditioned caused by viscid humours (phelgum) passes through trachea & lodges in lungs resulting irritation of mucus membrane of bronchioles. [4,5,6,7,8,11,12,]

The modern medicines used for chronic bronchitis has drug toxicity; hence it has its limitations and therefore cannot be used for longer duration. Unani drugs are much safer and cost effective than modern medicine therefore can be used safely for longer duration. We have planned to evaluate clinically expectorant & demulcent activity of a single Unani drug named *Aslussoos*. In the ancient classical literature, the toxicity data and literature review does not show any toxic adverse effect in the therapeutic dose which we have considered.

Considering this unconvincing scenario regarding the use of drugs and side effects thereof, researchers are pursuing the test drug of turning to nature and the traditional pathies. Unani medicine axiomatically comes to the fore as the *Muzmin iltehab sho'b* has successfully been treated since ancient time without considerably obnoxious side effects on the body. [4,5,6,7,8,11,12,] Plants have been extensively investigated for developing the safe and efficacious drug for *Muzmin iltehab sho'b*[4,5,6,7,8,11,12,]

Pharmacognosy of Drugs:

Liquorice or licorice is the common name of *Glycyrrhiza glabra*, a flowering plant of the bean family Fabaceae, from the root of which a sweet, aromatic flavouring is extracted. The liquorice plant is an herbaceous perennial legume native to West Asia, Tropical Asia, North Africa, and Southern Europe. Liquorice is used as a flavouring in confectionery, tobacco, beverages, and pharmaceuticals, and is marketed as a dietary supplement.

Liquorice extracts have been used in herbalism and traditional medicine.[8] Excessive consumption of liquorice (more than 2 mg/kg [0.91 mg/lb] per day of pure glycyrrhizinic acid, a key component of liquorice) can lead to undesirable

consequences. Clinically, it is suspected that overindulgence in liquorice may manifest as unexplained hypertension, low blood potassium levels (hypokalemia), and muscle weakness in individuals.[8][9][10] Consuming liquorice root extract should be avoided during pregnancy.[8][9][10]

Aslussoos *(Glycyrrhiza glabra Linn)* and compound formulations like Sharbate zoofa, Sharbate Akseere sadar and Qurse Zeequnnafas etc. have been studied scientifically for their putative role in the management of chronic lung diseases and most of them were found effective.[11]

The principle underlying the management of *Muzmin iltehab sho'b* is to remove the *Asbab maddi* (causative matter). Thus, for treating *Muzmin iltehab sho'b,* we need to concoct the causative matter by using drugs having properties like *tahleel, taqtie* and *talteef* and finally eliminate it by using *munaffise balgham* drugs. From a pool of efficacious drugs for this disease we are going to conduct a clinical trial of Aslussoos *(Glycyrrhiza glabra Linn) in 30 patients of* chronic bronchitis *Muzmin iltehab sho'b*. For the trial purpose this drug has already been tried with good results in the treatment of *Muzmin iltehab sho'b* by ancient Hakims and have been described to be *Mulattif, Munaffise balgham, Muhallil* and *Mufatteh.* On the basis of these properties, a working hypothesis is formed stating that, a pharmacopeial with the mentioned properties may be beneficial in

Fig. 02 Aslussoos- Glycyrrhiza Glabra used in Management of Chronic Bronchitis

the treatment of *Muzmin iltehab sho'b.* In view of the described effect of the Aslussoos *(Glycyrrhiza glabra Linn)*, relevant reports on its individual ingredients and the age-old practice of Unani physicians to use this drug in a number of respiratory diseases including those simulating with *Muzmin iltehab sho'b* in their clinical practice, present study has been designed to study the efficacy of Unani drug in the management of *Muzmin iltehab sho'b.* It is a randomized open clinical trial.

Material and Method

The present study in titled as "Study of *Muzmin iltehab sho'b* with therapeutic evolution of a Unani drug" was conducted. Before embarking upon the project, a comprehensive protocol was chalked out and put forth for ethical clearance, from the Institutional ethical committee. After ethical clearance clinical study was started by enrolling eligible patients.

1. Criteria for Selection of Cases:

a. Inclusion Criteria:

The patients attending the OPD.

Patients of both sexes between the age of 40 to 60 years.

Patients evaluated according to clinical sign and symptoms.

Written consent of patient to participate in the study.

b. Exclusion criteria:-

Patients with active cardiac diseases and major diseases of heart.

A case of acute bronchitis

Cases of emphysema

Cases of bronchiectasis

2. Selection of subjects

Patients were selected on the basis of clinical diagnosis. Any patient, above 40 years of age, giving history of chronic cough for 3 months during each of the two successive years, was selected from *Moalajat* OPD and evaluated for the consideration as a research subject. In the process of selection, spirometry was done. If the FEV1 / FVC was found <80% and referred investigations were found normal; the patient was diagnosed as a case of *Muzmin iltehab sho'b* (chronic bronchitis). These diagnosed patients, if fulfilled all the terms of inclusion criteria, were selected for the study, Written informed consent was sought from every patient before inclusion in the study.

During the selection procedure, complete history including general physical and systemic examination was carried out and recorded on a prescribed case report proforma which was designed with the consultation of the guide. The patients were enquired about their name, age, sex, marital status, address and occupation.

Chief complaints:

All the patients were interrogated about their chief complaints and duration of suffering in detail, which were noted down in chronological order in the prescribed Proforma.

Past history:

While taking the history, emphasis was given on past history for any disease especially pulmonary tuberculosis, carcinoma of the lung, bronchiectasis, cystic fibrosis and chronic congestive heart failure etc.

Dietary habits:

Dietary habits, type of diets, etc. were inquired.

Personal history:

Smoking habits, pan chewing etc. were inquired about in personal history.

Family history:

Regarding family history, patients were asked about the presence of any significant history of respiratory disease in the family.

Socioeconomic history:

In socioeconomic history, patients were assed about their monthly income, education and occupation.

Systemic and local examination:

After history, general physical examination was done with special emphasis on pulse (rate, rhythm, character and volume), blood pressure, temperature, respiratory rate, respiratory distress with simple activities, build, skin, hair, tongue, eyes, clubbing of fingers, cyanosis, pallor, anemia, oedema and lymphadenopathy etc. Likewise, a careful systemic and local examination was also done to look for any findings and involvement of any other serious illness.

3. Investigations:

Certain investigations were carried out aiming following important objectives.

To exclude the patients other than Muzmin Iltehab *Sho'b* (chronic bronchitis) as a part of exclusion criteria.

To establish the safety of the test drug. Following investigations were done in every case.

Hb%

TLC

DLC

ESR

X-Ray Chest PA View

PFT

4. Informed consent

Patients, fulfilling the inclusion criteria as mentioned above, were given the information sheet having details regarding the nature of the study, the drug to be used, method of treatment etc. Patients were given enough time to go through the contents of informed consent sheet. They were given the opportunity to ask any question, and if agreed, they were asked to sign the informed consent form.

5. Study design

This is an open randomized clinical trial.

6. **Sample size**

The sample size was fixed as 30 patients.

7. Assessment of Mizaj

Determination of mizaj was done on the basis of assessment of different parameters mentioned in literature. These parameters have been shown in the table attached with the case report form in annexure.

8. Duration of protocol therapy

The treatment period was 30 days.

Selection of drug

Most of the scholars, while describing the pathogenesis of this disease, have mentioned *Asbab-e-badiyah* i.e smoke, dust, fumes, cold air and *Asbab-e-wasila* as causative factors for the disease. According to them *Asbab-e-badiyah* cause inflammation in the airways and produce *ratoobat* (mucus hypersecretion) that results in narrowing of airways. Cough is produced due to narrowing of airways caused by accumulation of secretion. *Sue mizaj ratab* of lungs and *nazla* produce *sual* (cough). According to Ibn Zohar and others, accumulation of *ratoobat* (secretions) in bronchioles due to *insibabe mawaad* (descent of secretions) causes *sual* (cough) and *zeequnnafas* (breathlessness).

For the rationally effective treatment of this pathology, a Unani drug was required having all those properties which could revert this pathologic aberration towards normalcy to restore normal physiological functions. By careful forage into literature, a drug was found out, the ingredients of which were having all requisite properties like *Muhallil, Mulattif, Mufatteh, Munaffise balgham* etc.

The name of drug along with its dose is given below.

- Aslussoos *(Glycyrrhiza glabra Linn)* 3gm

10. Method of preparation, dosage and mode of administration of test drug.

The drug would be authenticated by expert botanist. The drug will be prepared according to the method mentioned in old classical Unani literature.

Form of drug:

The drug will be used in the form of *sufoof* (powder).

Dose of drug:

Sufoof-e-Aslussoos 3 gram twice a day.

(BD) with water.

11. Follow up during treatment

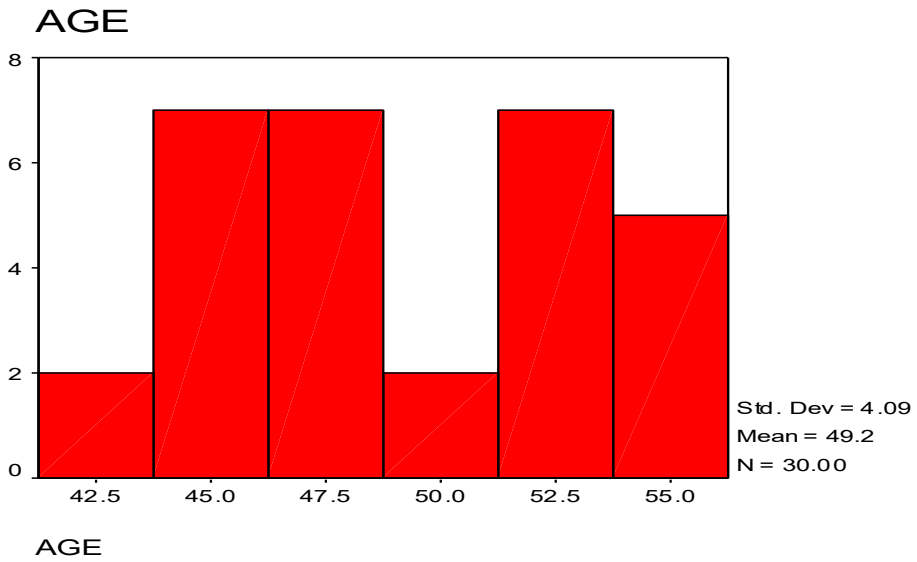
30 days study was divided into two visits of follow up, which were made at an interval of 15 days. At every visit, the patients were asked about the improvement or worsening in their symptoms and subjected to examination to assess clinical findings. Concomitant treatment was not allowed during the protocol period. The patients, who were taking any other medicine as a treatment of *Muzmin iltehab sho'b,* were advised to observe abstinence for a week from consuming any other drug before commencing treatment with the test drug.

Observation & Results

Table no.1 A study subject according to age.

N	**30**
	0
Mean	**49.17**

Median	**48.00**
Standard Deviation	**4.09**
Minimum	**54**
Maximum	**56**

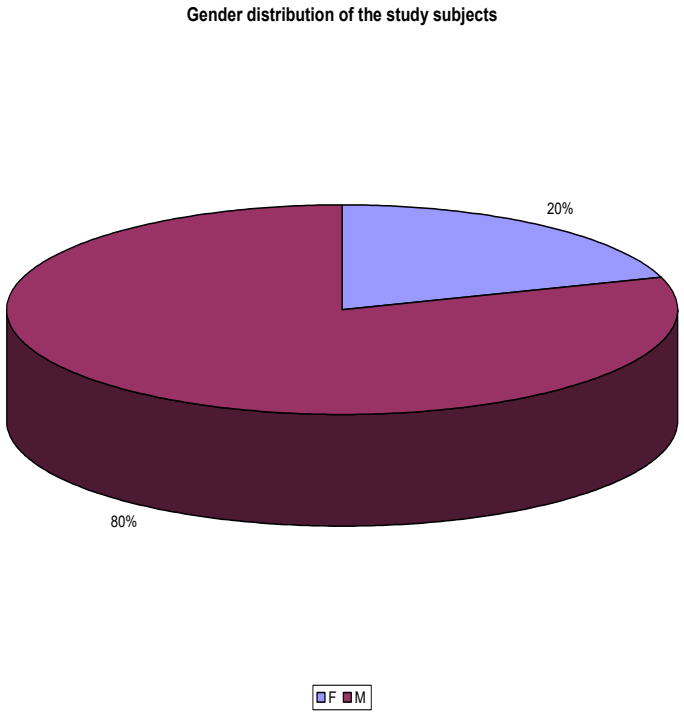


Graph No.1

It is evident from the table no.1 and Graph no.1. those maximum numbers of cases were recorded in the age group of 40 years to 50 years followed by in the age group 51 years to 60 years. The mean age of the study subject was 49.17.

Table No. 2 A study subject according to sex.

Sex	No. of patients	Percentage
Male	24	80%
Female	6	20%
Total	30	100%



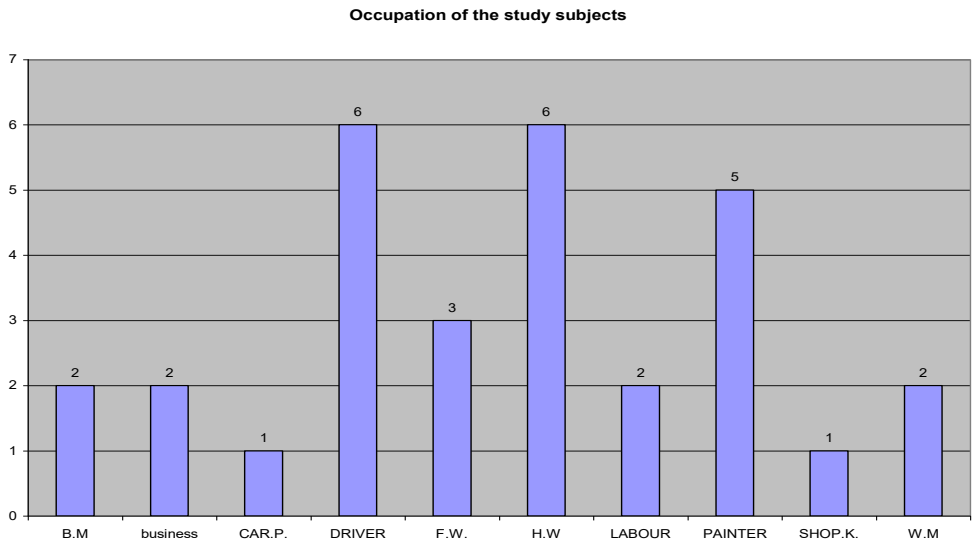
Graph no.2

A study subject according to sex.

As shown in table no.2 and graph no.2, the maximum number of cases of the study subjects ranged between 40-60 years; male 80% and female 20%.

Table no.3 A study subject according to Occupation.

S. No.	Occupation	No. of patients	Percentage
1	Painter	5	16.67%
2	Bidi maker	2	6.67%
3	Business man	2	6.67%
4	Factory worker	3	10%
5	Driver	6	20%
6	Carpenter	1	3.33
7	Shopkeeper	1	3.33%
8	Labour	2	6.67%
9	House Wife	6	20%
10	Watchman	2	6.67%

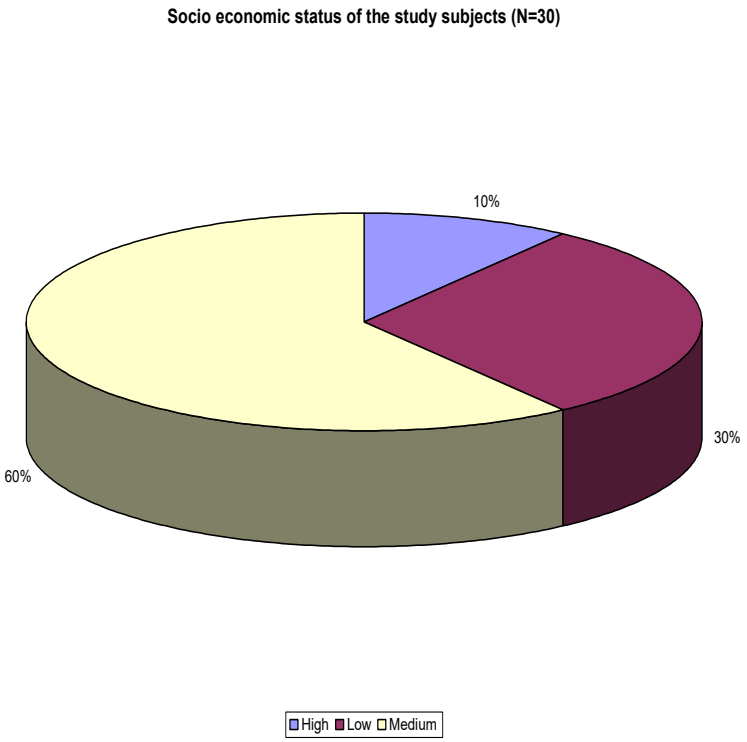


Graph no.3

As shown in table no.3 and Graph no.3, to determine the occurrence of chronic bronchitis among the different occupations and social status. All the patients were from the following categories. Painter 5, i.e.16.67%, Bidi maker 2 i.e. 6.67%, Business man 2 i.e. 6.67%, factory worker 3 i.e. 10%, driver 6 i.e. 20%, carpenter 1 i.e. 3.33%, shop keeper 1 i.e. 3.33%, labour 2 i.e. 6.67%, house wife 6 i.e. 20%, watchman 2 i.e. 6.67%. In the above categories the patients who were driver and house wives noted highest incidence of chronic bronchitis.

Table no.4 A study subject according to Socioeconomic status.

S. No.	Socioeconomic status	Percentage
1	Low	60%
2	Middle	30%
3	High	10%

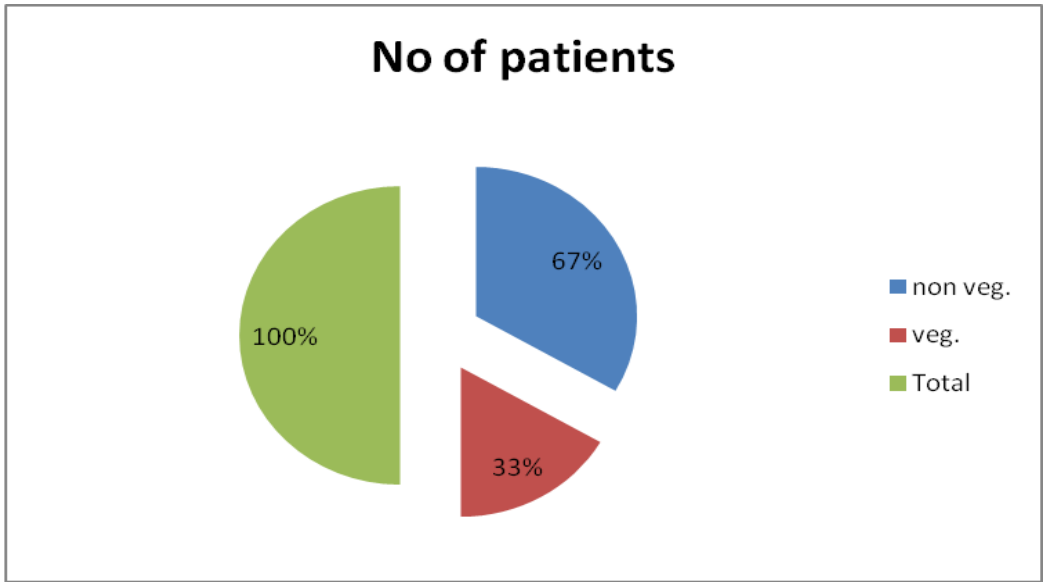


Graph No.4

It can be observed from the above table that the maximum number of cases 60% were belonged to lower income group, followed by 30% of middle-income group and remaining 10% were belonged to high income group.

Table No. 5 A study subject according to Dietary habits.

DIET	FREQUENCY	PERCENT
Non-Vegetarian	20	67
Vegetarian	10	33
TOTAL	**30**	**100.0**



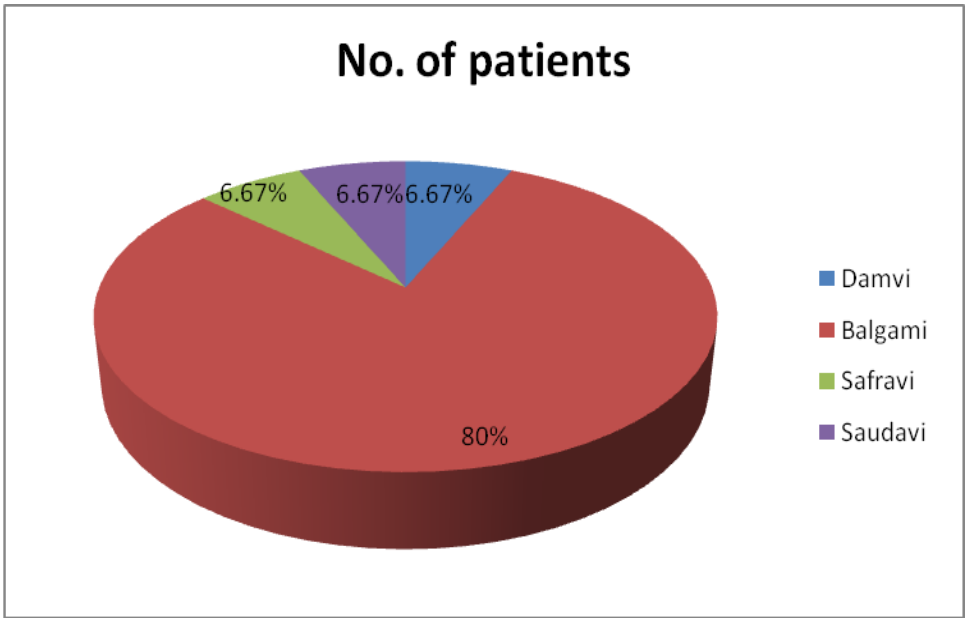
Graph. no.5

It is evident from the table no.5 and Graph no.5 that the out of 30 cases 67% were from non-vegetarian group, while 33% cases from vegetarian group.

This indicates that the disease is more prevalent in non-vegetarian.

Table no.6 A study subject according to Mizaj.

S. No.	Mizaj	No. of patients	Percentage (%)
1	Damavi	2	6.67%
2	Balgami	24	80%
3	Safravi	2	6.67%
4	Saudavi	2	6.67%
	Total	**30**	**100.00%**

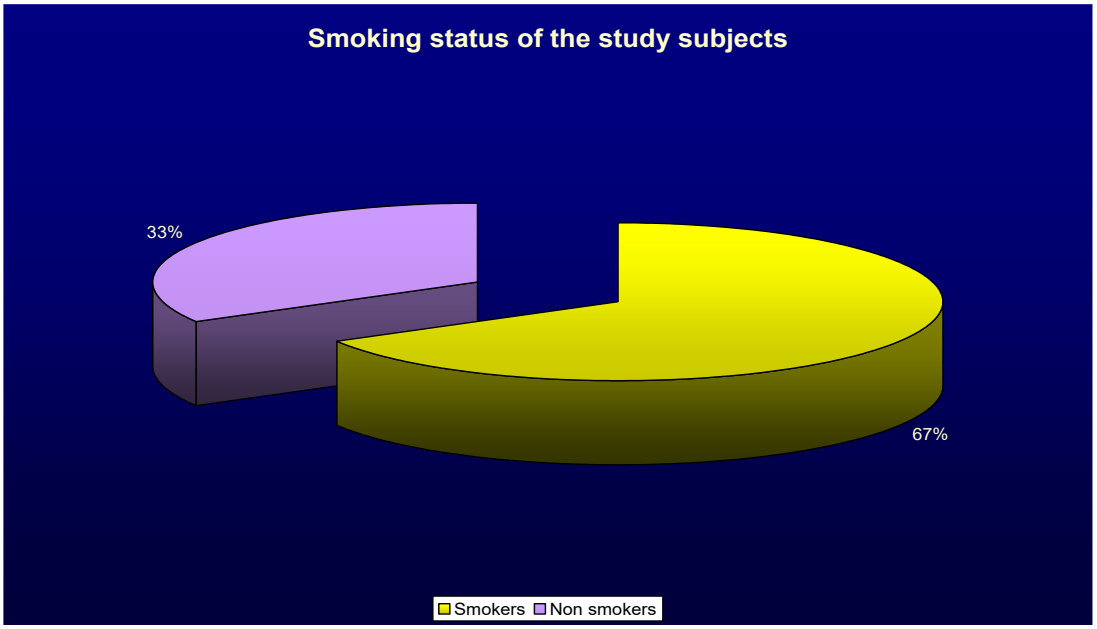


Graph no.6

The highest number of patients who had Balghami mizaj are more susceptible 24 i.e. 80%. Then all other 3 mizaj were recorded a 2 no patients in each group i.e. 6.67%.

Table no.7 A study subject according to smoking habit.

Smoker and Non smoker	No of patients	Percentage
Smoker	20	67%
Non-Smoker	10	33%
Total	30	100%



Graph No.7

As shown in table no.7 and Graph no.7, it can be observed from the above table that the maximum number of cases 67% were belonged to smoker group, followed by 33% of non-smoker group.

Discussion:

This study demonstrates the effectiveness of Aslussoos in managing chronic bronchitis by correlating Unani concepts with modern clinical understanding. The pathological basis of chronic bronchitis in modern medicine—mucus hypersecretion, ciliary dysfunction, airway inflammation—aligns closely with Unani descriptions of accumulated viscid phlegm and derangement of Sue Mizaj Ratab in pulmonary structures. The demographics of the study population reflect known risk factors: higher prevalence in males, smokers, low socioeconomic groups, and patients exposed to occupational pollutants. The predominance of Balghami mizaj (80%) aligns with Unani theory that diseases of phlegm accumulation occur more frequently in individuals with cold-moist temperament. Aslussoos possesses Mulattif (demulcent), Muhallil (anti-inflammatory), Munaffis-e-Balgham (expectorant), and Mufatteh (bronchodilatory) properties, providing a rational basis for its use. Modern phytochemical studies also support its anti-inflammatory, mucolytic, and bronchodilatory actions. The study design ensured objective assessment through clinical and laboratory evaluations, while the absence of adverse effects highlights its safety profile compared to conventional bronchodilators and steroids. Limitations include the small sample size and relatively short duration, suggesting the need for larger controlled trials for more definitive conclusions.

Summary:

The study explores the therapeutic role of Aslussoos (Glycyrrhiza glabra) in chronic bronchitis, a common respiratory disorder associated with hypersecretion of mucus, cough, and airway obstruction. Chronic bronchitis is prevalent among smokers, workers exposed to pollutants, and individuals belonging to lower socioeconomic groups. Unani literature describes the disease as resulting from abnormal accumulation of phlegm in the airways, recommending drugs that soften, dissolve, and expel thick humors. A total of 30 patients aged 40–60 years were enrolled based on clinical presentation and spirometry results (FEV1/FVC < 80%). Exclusion criteria included emphysema, bronchiectasis, and acute bronchitis. Patients were given 3 g of Sufoof-e-Aslussoos twice daily for 30 days. Observations showed higher disease prevalence among smokers (67%), non-vegetarians (67%), and individuals with Balghami mizaj (80%). Clinical improvement was noted in symptoms such as cough, sputum, chest congestion, and breathlessness. No toxicity or adverse reactions were observed. The findings support the traditional claim that Aslussoos is effective in respiratory diseases and can be safely used for prolonged durations.

Conclusion:

The clinical evaluation of Aslussoos (Glycyrrhiza glabra Linn) in chronic bronchitis reveals that it is a safe, effective, and well-tolerated Unani therapeutic option. It significantly alleviates key symptoms such as cough, sputum production, and breathlessness, supporting both classical Unani indications and modern pharmacological evidence. The study further highlights the importance of integrating traditional medicines with evidence-based clinical approaches for chronic respiratory diseases. Larger, controlled studies are recommended to strengthen the findings and explore long-term benefits

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