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EVALUATE THE EFFICACY OF UNANI MEDICINE IN THE MANAGEMENT OF SIMAN E MUFRIT (OBESITY)

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ABSTRACT

Introduction:

The word obesity is derived from Latin obesitas, which means stout, fat, or plump. Obesity may be defined as abnormal deposition of adipose tissue due to an enlargement of fat cell size, an increase in fat cell number, or a combination of both. It is generally associated with lifestyle disorders. In Unani literature, Siman e Mufrit (obesity) is defined as a condition in which there is an increase of ratoobat (wetness) and baroodat (coldness) in the body. In other words, Khilt e Balgham is increased more than the normal limit in the body. Its etiology is attributed to Soo e hazam, Ifrat e naum, Ifrat e sukoon, and Qillat e harakat e badani. The Unani system of medicine gives the concept of asbab e sitta zarooriyya, without which the life of a human being is unimaginable.

Aim and Objectives:

The study aimed to evaluate the efficacy of Unani drugs in the cases of Siman e Mufrit (obesity) and to determine the safe, easily available, and cost-effective Unani drugs used in Siman e Mufrit (obesity).

Material and Methods:

Diagnosed cases of obesity after fulfilling inclusion criteria will be randomly allocated after taking informed consent from either group. Group A (control group) will be given Unani formulation oral Sufoof twice a day. Group B (test group) will be given Unani formulation of oral Sufoof twice a day. The sample size of the study was 40 patients, who were randomly allocated into two groups, Group A and Group B, with 20 patients in each group. a randomized single-blind standard controlled clinical trial.

Results and Discussion:

The overall response to treatment was defined as an excellent response, a good response, a satisfactory response, and a poor response. The therapeutic responses of groups A and B showed that out of 40 patients, 14 (35%) got a good response, 18 (45%) patients got a satisfactory response to their clinical symptoms and signs, and 8 (20%) patients were found in the categories of poor response. It is evidenced that the formulae of both groups are effective in relieving clinical symptoms and signs of obesity. It is evident from the above-described observations that group A (test) medicines are more effective than group B (control). Obesity signs and symptoms were improved in both groups. At the end of the study, the statistical significance of the result was noted. It was concluded that the efficacy of Unani formulations on obesity was found to be clinically and statistically significant; both groups are safe and effective in both groups. Further, the study found that $p<0.0001$ contradicts the null hypothesis and shows significance.

Conclusion:

On the basis of the above result and discussion, it can be concluded that the drugs in groups A and B produced a significant effect in the treatment of obesity. However, the biological mechanisms through which the Group A and B drugs reduce clinical features still remain unclear and need to be validated with experimental and clinical studies.

Key words: Siman e mufrit, Globesity, Asbab e sitta zaooriyya, Ifrat e Naum, Su e Hazm

INTRODUCTION

Obesity is a condition where body weight is more than 20% above a desirable standard due to an excessive accumulation of adipose tissue. Obesity is a complex multifactorial health condition that is arising globally, irrespective of region, religion, sex, age, etc. Due to higher-than-average levels of muscular tissue, an athlete may be overweight but not obese. The health risks associated with obesity, include hypertension, lung disorders, arthritis, cancer, varicose veins, gallbladder disease, diabetes mellitus that is not insulin-dependent, and cardiovascular sickness. Obesity nowadays has become an emerging global abnormal medical condition that was named Globesity by the WHO, which stands for globe and obesity. [1]

Obesity involves both increased fat cell size and number and occurs when energy intake is greater than energy expenditure. Numerous factors can influence the equilibrium between energy intake and output, such as the type and amount of food consumed, genetic and environmental influences, and physical and mental health. According to the WHO statement, obesity is a complex condition with serious social and psychological dimensions that affects virtually all age groups and socio-economic groups and threatens to overwhelm both developed and developing countries. The body mass index (BMI), waist size, waist to hip ratio (WHR), and percentage of body fat are some of the metrics and classifications used to quantify and classify obesity. BMI is the most common way of assessing obesity. BMI is a measure of weight that adjusts for height and correlates highly with body fat (weight). Waist circumference (WC), on the other hand, is a surrogate measure for abdominal fat. A BMI of 18.5 to 24.9 is normal weight; less than 18.5 is underweight; overweight is defined as a BMI of 25 to 29.9; a BMI of 30 is considered obese; and a BMI of a BMI of more than 40 is considered as morbid obesity. [2]

Siman e mufrit or farbahi, or motapa means excessive fat accumulation in the body. In Unani literature, Siman e mufrit is caused by the accumulation of Ghair tabaee balgham (abnormal phlegm), and hence the khilt e balgham predominates in the body. Hippocrates was the first to describe in detail obesity and its association with diseases. Balgham e Zujjaji (vitreous phlegm), a type of ghair tabaee balgham that resembles vitreous humour and is the thickest of all abnormal types, is considered the cause of obesity by the majority of Eminent Unani Physicians. In this condition, loss of movement of organs is due to excessive accumulated phlegm and a cold temperament; hence, the person becomes dull and lazy. Phlegm, after mixing with blood, increases its viscosity and also constricts the vessel walls, which are responsible for various diseases. [3]

WHO global estimates for the year 2009 reported that 1.5 billion people were overweight; of these, over 200 million males and nearly 300 million females were obese. [4,5] Overall,

more than one in ten of the world's adult population was obese. In 2010, around 43 million children under the age of five were overweight. According to a WHO global estimation done in 2014, about 13% of the world's adult population (11% of men and 15% of women) were obese. [6] The prevalence of obesity varies according to age, sex, and region. The World Health Organisation (WHO) projects that by 2015, there will be over 700 million obese people and about 2.3 billion overweight adults globally. Overweight and obesity are global issues. [7] In the UK, obesity rates have nearly doubled in the past 18 years, from 13% of men and 16% of women in 1993 to 24% of men and 26% of women in 2011. In the same year, about 3 in 10 children aged 2–15 years were found to be overweight or obese. [8]

In a few cases, obesity may result from trauma or tumours in the food-regulating centres in the hypothalamus. In most cases of obesity, no specific cause can be identified. Contributing factors include genetic factors, eating habits taught early in life, overeating to relieve tension, and social customs. Studies indicate that some obese people burn fewer calories during digestion and absorption of a meal, resulting in a smaller food-induced thermogenesis effect. Additionally, obese people who lose weight require about 15% fewer calories to maintain a normal body weight than people who have never been obese. Interestingly, people who gain weight easily when deliberately fed excess calories exhibit less NEAT (non-exercise activity thermogenesis, such as occurs with fidgeting) than people who resist weight gains in the face of excess calories.

According to Ibnu Sina, the cause of obesity is the accumulation of excess fat. Excess fat and oiliness of the skin point to a cold temperament. [9] Ibnu Nafeesi has stated that the fatty substances may be solid or liquid and are usually deposited in the subcutaneous layer (and are present in the membrane and over the nervous tissue). Fatty tissue is cold in temperament and demulcent. It gets accumulated over the membranes in the form of layers over the tendons and muscles because of the cold temperament. [10] when Ali Bin Raban Tabari described etiology and pathophysiology of siman *e mufrit* in his famous book *Firdous ul hikmat*. He has emphasized that excess eating and a sedentary lifestyle are the most important factors contributing to obesity. Wearing soft clothes and using soft bedding also leads to obesity. The softness of bedding causes a person to sleep more and finally increases the *Ratoobat* in the body, which leads to obesity. [11] *Shahm* (thick fat) is usually presences over the membrane and nervous tissues. [9] Ibnu Sina has written that *Shahm* and *Sameen* both have lower temperatures. Excess fat and oiliness (of the skin) point to a cold temperament. In such cases, the body feels soft and flabby. [9] According to Abu Bakar bin Mohammad Zakariya Razi, siman e mufrit is divided into two parts: 1. Local (*Muqami*): when accumulation of *shahm* in a particular organ is known as

a Muqami siman e mufrit 2. General (*Umooomi*): excessive generalized deposition of s*hahm* in the body is known as *ummomi siman e mufrit.* [12]

Obesity is detected in a large number of patients from all over India. The patients who attended several specialist clinics at the Government Nizamia General Hospital in Hyderabad also found this condition. Obesity appears to be a serious issue in India as well. Humans have been attempting to protect their health and prevent disease since the dawn of humanity. The present study aimed to evaluate the efficacy of Unani medicine in the case of obesity. Treatment in the allopathic medical system is predicated on symptomatic alleviation. When siman e mufrit medications don't work or have side effects, surgery is used. These existing facts provided me with an internal desire to choose this topic and develop a comprehensive body of work in this burgeoning field. The study's goals were to evaluate the efficacy of Unani drugs in the cases of siman e mufrit, as well as to determine the safe, easily available and cost-effective Unani drugs used in siman e mufrit.

MATERIAL AND METHODS

The study was designed as a Randomized single blind standard controlled clinical trial and the sample size was determined as 40 patients divided into 2 groups of 20 each. Before starting clinical trials, the research protocol was submitted to the Ethical Committee of Govt. Nizamia Tibbi College, and ethical clearance was obtained from the committee for biomedical research. "Evaluate the efficacy of Unani medicine in the management of siman e mufrit (obesity)" was carried out at Govt. Nizamia Tibbi College and Hospital, Charminar, Hyderabad, during 2017–2019, and the patients with siman e mufrit were selected from the Outpatient Department based on clinical signs and symptoms, history, clinical examination, routine investigations (CBP, RBS, ESR, SGOT, SGPT, Lipid profile and Thyroid Stimulating Hormone) and randomly divided into two groups A (control group) and B (test group). After taking their informed consent, they were included in the trial. Patients who fulfill inclusion criteria such as patients with associated symptoms suggesting obesity, 18 to 60 years of age, either sex, or overweight (BMI > 25) are included in the study, and patients who didn't fulfill inclusion criteria such as patients aged below 18 and above 60 years, patients with genetic disorders, patients with endocrine disorders, patients with renal disorders, patients with obstructive liver diseases, patients with a history of cardiac diseases, pregnant and lactating mothers, and patients with a BMI greater than 40 were excluded from the study. The duration of treatment was 90 days. All follow-ups were done once every two weeks. The subjective (weight, breathlessness, difficulty sleeping (sleep apnea), inability to cope with sudden physical activity, fatigue, back and joint pains) and objective (Body Mass Index and Lipid profile) parameters were assessed at each follow up as 0^{th} day, 15^{th} day, 30^{th} day, 45^{th}

day, 60th day, 75th day, and 90th day for the diagnosis and evaluation of the efficacy of the drugs. No concomitant treatment was allowed.

List of Ingredients of Group - A Drug (Sufoof)

Unani Name	English Name	Scientific Name	Quantity
Darchini	Ceylon Cinnamon	*Cinnamomum zeylanicum*	1gm
Pudina	Mint	*Mentha arvensis* Linn.	1gm
Zanjabeel	Ginger	*Zingiber officinale* Rosc.	1gm
Ajwan-e-desi	Ajowan	*Trachyspermum ammi* Linn.	1gm
Zeera-e-Siyaah	Caraway	*Carum carvi* Linn.	1gm

List of Ingredients of Group - B Drug (Sufoof)

Unani Name	English Name	Scientific Name	Quantity
Asaroon	Asarbacca	*Asarum europaeum* Linn.	½ gm
Anisoon	Aniseed	*Pimpinella anisum* Linn.	½ gm
Beqkh-e-Karaf	Celery	*Apium graveolens* Linn.	2gms
Filfil Siyaah	Black Pepper	*Piper nigrum* Linn.	2gms

Method of preparation, dosage, and mode of administration: making a fine powder of each drug and mixing it thereafter, 5 gms of sufoof twice a day along with lukewarm water before meals were given orally to the patients for 90 days.

RESULTS

The observations and results concerning demography, clinical symptoms and signs obtained from the trial have been illustrated in tables and graphs. They are discussed in the following paragraphs consecutively to show the efficacy of the group A and B drugs separately. As it is evident from Table 1, the highest no of patients observed in the age group of 39 - 48 years i.e., 15 cases (37.5%) and the age. Table 2, shows that the maximum no of patients was females 31 (77.5%) followed by males 09 (22.5%). Table 3, shows that the socio-economic status is concern patients from upper class affected more as 19 cases (47.5%), the patients from lower middle class affected as 14 cases (35%) followed by upper lower affected 07 cases (17.5%). In this study, obesity is more common among home makers as 20 cases (50%) followed by students as 11 cases (27.5%) as is evident in Table 4. As it is evident from Table 5 the highest number of non-vegetarians were

affected as 38 cases (95%) followed by 02 cases (5%) of vegetarians. Table 6, shows that the temperament of the patients was accessed based on Ajnas-e-Ashra and it was recorded that 34 cases (85%) were balghami mizaj patients wheras 06 cases (15%) were saudavi patients.

Table 1. Comparative distribution according to Age.

Age in Years	Group A		Group B	
	No. of Patients	Percentage	No. of Patients	Percentage
18-28	6	30.0	8	40.0
29-38	6	30.0	2	10.0
39-48	6	30.0	9	45.0
49-58	2	10.0	1	5.0
Total	20	100.0	20	100.0

Table 2. comparative distribution according to Gender.

Different Sex	Group A		Group B	
	No. of Patients	Percentage	No. of Patients	Percentage
Male	4	20.0	5	25.0
Female	16	80.0	15	75.0
Total	20	100.0	20	100.0

Table 3. Comparative distribution according to Socio-economic status.

Socio-Economic Status	Group A		Group B	
	No. of Patients	Percentage	No. of Patients	Percentage
Upper Class (UC)	0	0.0	0	0.0
Upper Middle (UM)	11	55.0	8	40.0
Lower Middle (LM)	6	30.0	8	40.0
Upper Lower (UL)	3	15.0	4	20.0
Lower(L)	0	0.0	0	0.0
Total	20	100.0	20	100.0

Table 4. Comparative distribution according to Occupation.

Occupation	Group A		Group B	
	No. of Patients	Percentage	No. of Patients	Percentage
Home Makers	10	50.0	10	50.0
Students	5	25.0	6	30.0
Private Employ	2	10.0	3	15.0
Business man	1	5.0	1	5.0
Professional	2	10	0	0
Total	20	100.0	20	100.0

Table 5. Comparative distribution according to Diet.

Diet	Group A		Group B	
	No. of Patients	Percentage	No. of Patients	Percentage
Non-Veg	18	90.0	20	100.0
Vegetarian	2	10.0	0	0.0
Total	20	100.0	20	100.0

Table 6. Comparative distribution according to Mizaj.

Mizaj	Group A		Group B	
	No. of Patients	Percentage	No. of Patients	Percentage
Damavi	0	0.0	0	0.0
Balghami	17	85.0	17	85.0
Safravi	0	30.0	0	0.0
Saudavi	3	15.0	3	15.0
Total	20	100.0	20	100.0

Table 7. Showing the therapeutic response in Group A (Test).

RESPONSE	Group A			
	Male	Female	Total	Percentage
GOOD RESPONSE	2 (10%)	6 (30%)	8	40.0%
SATISFACTORY	1 (5%)	10 (50%)	11	55.0%
POOR RESPONSE	0	1 (5%)	1	5.0%
NO RESPONSE	0	0	0	0.0%
Total	3 (15%)	17 (85%)	20	100.0%

Table 8. Showing the therapeutic response in Group B (Control).

RESPONSE	Group B			
	Male	Female	Total	Percentage
GOOD RESPONSE	1 (5%)	5 (25%)	6	30.0%
SATISFACTORY	3 (15%)	4 (20%)	7	35.0%
POOR RESPONSE	1 (5%)	6 (30%)	7	35.0%
NO RESPONSE	0	0	0	0.0%
Total	5 (25%)	15 (75%)	20	100.0%

DISCUSSION

As it is evident from Table 1, the highest no of patients observed in the age group of 39 - 48 years i.e., 15 cases (37.5%) and the age. It shows that the disease is more prevalent in adult persons. This supports the findings of [13]. Table 2, shows that the maximum no of patients was females 31 (77.5%) followed by males 09 (22.5%). It shows that females are affected more than females. This supports the findings of [14].

As it is evident from Table 3 the highest prevalence of obesity was seen in patients from upper class affected more as 19 cases (47.5%), the patients from lower middle affected as 14 cases (35%) followed by upper lower affected 07 cases (17.5%). According to the above distribution, obesity may be more prevalent in upper class socioeconomic status. This supports the findings of [15].

In this study, obesity is more common among home makers as 20 cases (50%) followed by students as 11 cases (27.5%) as is evident in Table 4. This supports the findings of [16].

As it is evident from Table 5 the highest number of non-vegetarians were affected as 38 cases (95%) followed by 02 cases (5%) of vegetarians. This supports the findings of [17].

Table 6, shows that the temperament of the patients was accessed based on Ajnas-e-Ashra and it was recorded that almost all the patients i.e., 20 (100%) were balghami mizaj. According to the Unani system of medicine, the pathogenesis of most diseases is described in terms of temperament and humour. The diseases of phlegmatic temperament mainly occur in those organs and persons who are previously having phlegmatic temperament physiologically. With this observation, it can be concluded that subjects with balghami mizaj were more prone to have Balghami ailments like obesity which is one of the life style disorders. This supports the findings of [18].

The efficacy of group A and group B drugs was assessed based on improvements in typical clinical symptoms and signs of obesity. At the end of the study, there were significant improvements in these symptoms in both groups A and B.

To assess the results of the study, the data of 40 patients was observed and statistically analyzed. The level of significance was set at 5% (p = 0.05), and the differences between the mean BMI scores of Group A and Group B were compared with baseline scores. Where $p<0.0001$, $p<0.001$, and $p<0.05$ denote results as highly significant, mild significant, and significant, respectively, whereas $p>0.05$ denotes results as not significant.

The t-test value of BMI parameters from the weight and height calculations of group A is 7.230, whereas those of group B are respectively 18.413 The graph shows the response of Group A drugs to BMI, and their P value is <0.00001, respectively. This shows that the result is significant. The graph shows the response of Group B drugs to BMI, and their P value is <0.00001, respectively. This shows that the result is significant. No recurrence or exacerbation was reported by any patient after the completion of the trial. No patient reported any adverse events throughout the study or after 90 days of follow-up. As the study was done for a limited duration with a small group of patients, further research needs to be carried out in this aspect. Hence, further elaborate studies are awaited in this context with a large sample size for a better drug combination. The response of the therapy or treatment was defined by the score difference between BMI and reduction or amount of weight loss, with an excellent response (16 and above). The therapeutic response of group A showed that out of 20 (100%) patients, 8 (40%) got a good response, 11 (55%) got a satisfactory response, and 1 (5.0%) got a poor response. In group B (control), 20 patients out of which 6 (30%) got a good response, 07 (35%), got a satisfactory response, and 1 (35%), got a poor response. It is evident from the above-described observations that, Group A medicines are more effective than Group B. BMI improved in both groups. It is concluded that, the efficacy of both Unani formulations on Obesity was found clinically and statistically significant, both the groups are safe and effective in management of Obesity. On the basis of above result and discussion it can be concluded that the drugs of Group A and B produced significant effect in the treatment of Obesity. However, the biological mechanisms through which the Group A and B drugs

reduce the clinical features still remain unclear and need to be validated with experimental and clinical studies.

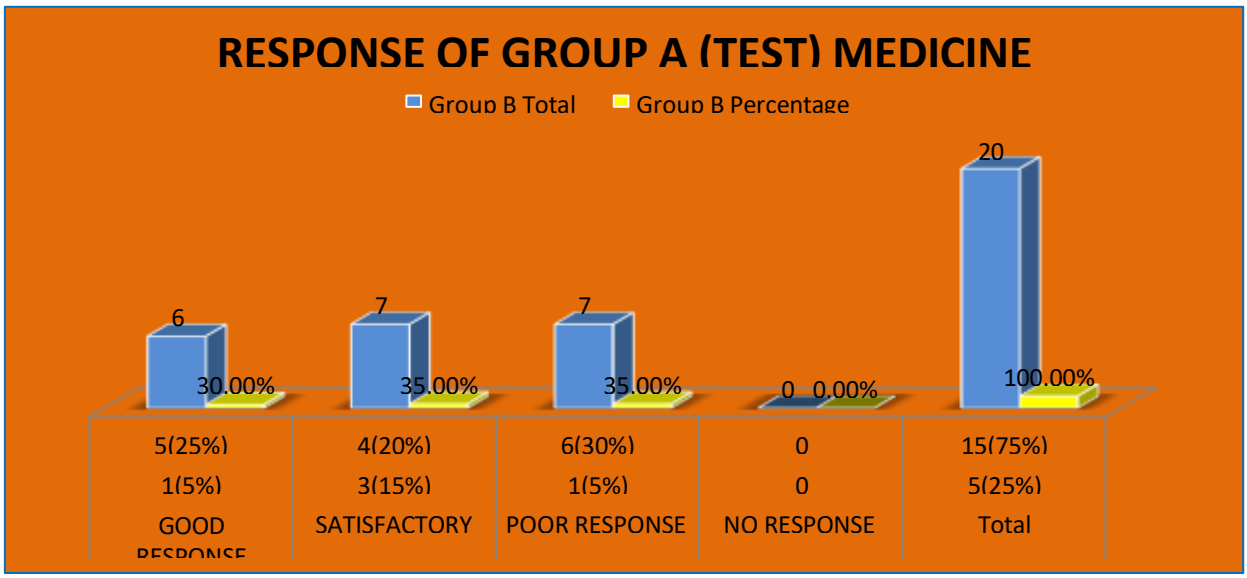

Figure 1. Showing the therapeutic response in Group A (Test).

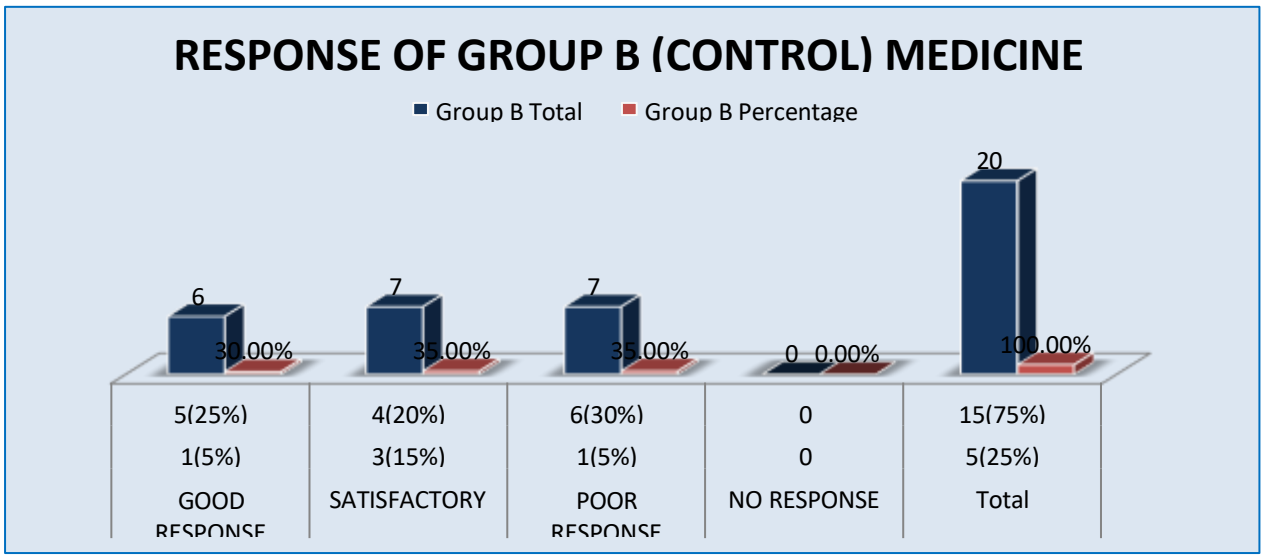

Figure 2. Showing the therapeutic response in Group B (Test).

The effectiveness of the ingredients of the group A and B drugs on saman e mufrit was justifiable based on the various studies that support the used ingredients in this study. The supportive findings were as follows:

The *Zingiber officinale* Rosc. contains two major constituents, gingerol and shaghol, which suppress the absorption of dietary fat from the intestines and help in the dissolution of excess fat deposited in the body. Rihana Kamal et. al. stated that these phytochemicals increase the metabolic rate and thus help to “burn off” excessive fat. [19]

Piper nigrum Linn. contains piperine, which is the active principle found in this plant. Ghani et al. reported that piperine reduced the body weight, levels of plasma total cholesterol, low-density lipoprotein (LDL), very low-density lipoprotein (VLDL), and activity of 3-hydroxy 3-methyl glutaryl coenzyme A (HMG CoA) reductase in the liver, heart, and aorta, VLDL, and significantly elevated the levels of plasma and tissue lipoprotein lipase (LPL) and plasma lecithin cholesterol acyl transferase (LCAT) in a high-fat diet. [20]

Popławski et al., 2000 reported that the α-asarone isomers (100, 150, 200, 250, 300 μM) of the asaroon were given to the high cholesterol diet fed rats (80 mg/kg/day), and the result was wonderful as the isomers reported 56% elevation and 56% reduction of HDL and LDL cholesterol levels. HDL (56.7%) Increased and decreased LDL cholesterol (43.2%.), this confirms the hypolipidemic activity of *Asarum europaeum* Linn. [21]

Ahmed et al., 2022 reported that, as an ordinary benchmark group, the first group (6 rats) benefited from a basal diet (BD). The second main group (24 rats) benefited from a high-fat eating regimen that incited corpulence and was then, at that point, characterised into four equivalent sub-gatherings as follows: group (2), as a positive control group, fed on BD, and groups (3-5) fed on BD containing 2.5, 5.0, and 7.5% (w/w) of the tried home-grown blends (anise, fennel, mint, and black seed) for 28 days, individually. Finally, the histological examination data agreed with the biological and biochemical results obtained. This study confirmed that herbs such as anise, fennel, mint, and black seed had anti-obesity effects. [22]

Mohsenpour et. al., 2023 reported that *Apium graveolens* Linn. was shown to have beneficial effects on cardiometabolic factors in animal models. As the progression of type 2 diabetes mellitus (T2DM) adversely affects cardiometabolic factors, we aimed to assess the effects of celery powder on glycemic and anthropometric indices, lipid profile, liver function, oxidative stress, and blood pressure of individuals with T2DM. In a pilot randomized, double-blinded, placebo-controlled clinical trial, 50 eligible adults with T2DM were randomly divided into two groups: intervention and control, to consume either 750 mg of celery powder (obtained from fresh celery) or placebo along with a low-calorie diet for 12 weeks, respectively. Dietary intake, physical activity, and cardiometabolic factors were assessed before and at the end of the study. Thirty-six patients finished the study (18 in each group). Consumption of celery powder significantly reduced body fat percentage (p =.021). Between-group analysis for changes in cardiometabolic factors did not show significant differences. [23]

Keramati, et. al., 2022 reported that the evidence provided by meta-analyses on the beneficial impacts of *Cinnamomum zeylanicum* supplementation on anthropometric

indices is still conflicting. The present study's aim was to evaluate the effects of cinnamon on obesity indices through an umbrella meta-analysis. The electronic databases, including Web of Science, PubMed, EMBASE, and Scopus, were systematically searched up to March 2021. Data for the effects of cinnamon on anthropometric indices were collected from the meta-analyses. An umbrella meta-analysis was carried out using a random-effects model. The pooled effects of seven meta-analyses showed that cinnamon supplementation significantly reduced body weight in comparison to the control group. According to the results, cinnamon could be suggested as a complementary weight-loss agent. This study could be considered a final conclusion about the effect of cinnamon on anthropometric indices. The results of this study showed that supplementation with cinnamon significantly reduces BMI and body weight. [24]

Kazemipoor et. al., 2013 reported that *Carum carvi* Linn., a potent medicinal plant, is traditionally used for treating obesity. This study investigates the weight-lowering effects of caraway extract (CE) on physically active, overweight, and obese women through a randomized, triple-blind, placebo-controlled clinical trial. Seventy overweight and obese, healthy, aerobic-trained, adult females were randomly assigned to two groups (n = 35 per group). Participants received either 30 mL/day of CE or placebo without changing their diet or physical activity. Subjects were examined at baseline and after 90 days for changes in body composition, anthropometric indices, and clinical and paraclinical variables. The treatment group, compared withthe placebo, showed a significant reductioninf weight, body mass index, body fat percentage, and waist-to-hip ratio. In conclusion,the resultss of this study suggest a possible phytotherapeutic approach for caraway extract in the management of obesity. [25]

CONCLUSION

In the present study, an attempt is made to treat patients with obesity with oral Unani drugs to evolve an effective Unani treatment. The response to treatment was defined as an excellent response, good response, satisfactory response, and poor response. Therapeutic response of groups A and B showed that out of 40 patients, 14 (35%) patients got a good response, 18 (45%) patients got a satisfactory response to their clinical symptoms and signs and 08 (20%) patients were found in the categories of poor response. It is evidenced that the formulae of both groups are having effectiveness in relieving clinical symptoms and signs of obesity. It is evident from the above-described observations that, group A (test) medicines are more effective than group B (control). Obesity signs & symptoms were improved in both groups. At the end of the study, the statistical significance of the result was noted. It was concluded that the efficacy of Unani formulations on obesity was found clinically and statistically significant, both the groups are safe and effective in the management of obesity. Based on the above result and

discussion it can be concluded that the drugs of groups A and B produced a significant effect in the treatment of obesity. However, the biological mechanisms through which the test group and control group drugs reduced the clinical symptoms and signs remain unclear and need to be validated with experimental and clinical studies. By the conclusion of the study found that the $p<0.0001$ which contradicts null hypothesis and show significance.

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CONFLICTS OF INTEREST

No any conflict of interest.

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