

Effect of Jawarish Bisbasa on dyslipidemia - A case study

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Abstract—Dyslipidemia is characterized by abnormal levels of lipids in the blood. There is a strong association between serum cholesterol and risks of coronary heart disease (CHD). Lipoprotein disorders or hyperlipidemia may result from a primary abnormality in lipid metabolism or secondary manifestation of some other condition. In Unani Medical System (UMS) mentioned under the heading of *Fart-e-Tadassum fid-dam*, *Fart-e-shahmeen fid-dam*, etc. They also describe its types and management through change in lifestyle and Unani drugs. The present study is to analyse the antihyperlipidemic effect of *Jawarish Bisbasa* (JB) in a case of dyslipidemia. The patient was 28 years old had been diagnosed with dyslipidemia/hypercholesterolemia three months prior to presentation. The patient was treated 8 weeks with JB. His body weight (BW) was 94 kg, BMI 27.4 m², WC 99 cm, WHR 0.91, SAD 28cm, BS(F) 87.31 mg/dl, serum cholesterol 223.9 mg/dl, Serum triglycerides 430 mg/dl, HDL cholesterol 38.98, LDL 98.92 mg/dl and VLDL cholesterol 195.45 mg/dl at the base line and at the end of 8 weeks becomes weight 84 kg, BMI was 24.8, WC 93cm, WHR 0.85, SAD 24.5, BS(F) 99.13 mg/dl, serum cholesterol 127.9 mg/dl, Serum triglycerides 185.95 mg/dl, HDL cholesterol 43.4mg/dl, LDL 38.51 mg/dl and VLDL cholesterol 46.54 mg/dl. There were no side effects reported during the treatment. JB showed significant antihyperlipidemic activity reducing lipid profile, BW, BMI and other anthropometric parameters. It is the first case report on the management of dyslipidemia/hyperlipidemia on JB..

Keywords— *Jawarish Bisbasa*, *Dyslipidemia*, *Hyperlipidemia*, *obesity*, *Saman-e-Mufrat*, *Unani Medicine*

I. INTRODUCTION

Lipid is oily or waxy substance of organic molecule found in living things circulates in the body. It is part of cell membranes and used for the creation of steroid hormones, bile salts and vitamin D. It is both derived from the diet and synthesized within the body, mainly in the liver [1]. The prevalence of dyslipidemia is very high in India, which calls for urgent lifestyle intervention strategies to prevent and manage this important cardiovascular risk factor. According to the survey for prevalence of dyslipidemia in urban and rural India, conducted by ICMR-INDIAB found that 13.9% hypercholesterolemia, 29.5% hypertriglyceridemia, 72.3% low HDL-C, 11.8% high LDL-C level. It was also found that 79% had abnormalities in one of the lipid parameters. This is a very common and significant risk factors for dyslipidemia included obesity, diabetes, and dysglycemia [2]. In last two decades 24% increase of deaths among adults between aged 25-69 years in India are due to cardiovascular disease (CVD) [3]. In Asian Indians CVD has been developed at a younger age in comparison to other diseases [4] mainly due to lifestyle changes associated with urbanization, nutritional transitions etc. [5]. Dyslipidemia has been closely linked to the pathophysiology of CVD and diabetes mellitus. It is a key independent modifiable risk factor for cardiovascular disease and diabetes mellitus [6-8] and in low- and middle-income countries one of the leading cause of death worldwide [9-10]. Unani system of medicine was

originated in third century BC in Alexandrian School (*Madrassa Iskandariyya*), in Greece, now it is very popular in India, Bangladesh, Sri Lanka and South Africa. In Iran, Pakistan, and China with some other names *Tibb Sunnatī* (Traditional Medicine), Eastern Medicine and Uyghur Medicine respectively. It has very rich literature in the field of Medicine. They had used urine, stool sample and examination of pulse as a diagnostic tool. Unani scholars were well aware of the presence of lipids (*dasoomat*) inside the blood, as well as the harmful effects produced by its excess, as they described it under the heading of in the context of obesity (*Saman-e-Mufrat*). '*Dasoomat*' is applied for lipids of plasma (cholesterol & triglycerides) and increased levels of which leads to this disease (hyperlipidemia). Therefore, we can say that the increase of *Dasoomat* (cholesterol & triglycerides) in blood as *Fart-e-tadassum fid-dam*. Every human being has natural property in their genes to be healthy. But excessive weight gain due to excessive accumulation of *shaham* (fat) is dangerous [11-13]. Clinical manifestations of hyperlipidemia are xanthelasma, corneal arcus, prepatellar xanthomas but most of the time dyslipidemia may remain hidden clinically. In most of the cases the hyperlipidemia may be diagnosed when lipid profile of the patients have been done who are associated with risk factors, or on random basis [14]. Hypertriglyceridemia is associated with Diabetes mellitus (type 2), chronic renal disease, abdominal obesity, excess alcohol intake, hepatocellular disease while causes of

hypercholesterolemia are Hypo and hyperthyroidism, nephrotic syndrome, pregnancy, anorexia nervosa, cholestatic liver disease & drugs (diuretics, corticosteroids) [14].

Concept of cholesterol in according to Unani philosophy

In classical Unani literature the description of hyperlipidemia (*Fart-e-tadassum-fid-dam*) is not as such but Unani scholars described *Saman-e-Mufrat* (obesity), which is almost similar to hyperlipidemia in all aspects as in etiology, clinical features, complications and management [15]. The father of medicine Hippocrates (460 BC) gives detail on obesity in his famous book *Fusool Buqrat*, 'Abzemiya', 'Tabiyatul Insaan' and 'Hifzul-sehat'. Thereafter other Unani scholars mentioned about this in their treatises Galen in *Fusool Buqrat mai Talkhees Jalinoos, Rofas* (98-117 AD) in "Kitab Tahzeelul Saman. He said 'when a person attains extreme of obesity then his death can occur suddenly due to the rupture of any major blood vessels of his body [16]. *Ali bin Rabban Tabri* (810 AD) in 'Firdausul Hikmat', *Abu Bakar Mohammad bin Zakariya Razi* (885-925 AD) in sixth volume of 'Al Havi Fit-Tib', *Ali Ibn-e-Abbas Majoosi* (930 AD) in 'Kamil-us-Sana, *Ibn-e-Sina* (980-1037 AD) in 'Al-Qanoon fit-Tib', *Ismail Jurjani* (1140-1236 AD) in 'Zakheera Khuwarzam Shahi', *Jamaluddin Iqsarai* in 'Sharah-e-Mojiz' and *Nafees bin Auz Kirmani* (1438 AD) in 'Sharah Asbab wa Alamat' and *Daud Antaki* (1541 AD) in 'Tazkira-ul-Albab' etc. [15]. According to philosophy of UMS *Fart-e-tadassum-fid-dam* is due to predominance of *Khilte Balgham* in the body excessive fat deposited and the person becomes obese [16] and it was advice to the patients to avoid the oily diet and food cooked in oil. *Ibn Sina* and others have cautioned the obese persons that fatty diet will be dangerous to them [17]. Excess of *Balgham* causes increase in viscosity of the blood and thus prevents *Nufuz* (absorption) of *Rooh* (pneuma) in the organs which finally cause death of the obese persons. *Balgham* after mixing with blood produces lubrication in its *Qiwam* (viscosity) [17]. In Unani its Pathophysiology of *Fart-e-tadassum-fid-dam* is described is in the context of obesity. If *Hararat-e-Ghareezia* (innate heat) of body becomes low due to excess of *Baroodat-e-Mizaj* (coldness of temperament) that causes constriction of vessels results to development of obesity. These two factors low innate heat and constriction of vessels cause early death of obese person. Both these are dependent to each other in a positive feedback system and both these factors finally leads to decrease in the passage of *Rooh* (oxygen supply) to the organs and finally death occur [12,17]. In obesity, excessive accumulation of *Shaham* (fat) in body and *balgham* in blood causes "Imtilai Kaifiyat (increase in vasopressure)" which causes loss of vasodilatation of vessels and finally decreases the *Hararat-e-ghareezia* [11-12, 14-16].

This paper is organised as follows, Section I includes introduction which describes the disease and its incidence along with complication followed by concept of

cholesterol in Unani system of medicine, Section II regarding the methodology and case presentation along with its old treatment, Section III intervention of Unani drug JB and their effect after the treatment of 8 weeks, Section IV results of the JB in comparison to base line, V about the discussion on effect of drug with scientific support Section V gives an insight where research can be extended the work with future prospects.

Objective of the study

The objective of this case presentation is to describe the efficacy of Unani pharmacopeial formulation *Jawarish Bisbasa* (JB) significantly reduced the body weight, serum cholesterol, LDL, VLDL etc. and enhance the HDL levels.

II. METHODOLOGY

In this case study the patient was 28 years old young Muslim Pathan unmarried, smoker male, came in our GOPD of RRIUM, Aligarh with the complaints of overweight, abdominal obesity, lethargyness, sometimes palpitation and cramps in legs and shoulder during work. Since last 3 months. Before three months he was asymptomatic, gradually developed above symptoms and started feeling congestion and heaviness in chest. He consulted Jawaharlal Nehru Medical College, Hospital, Aligarh and admitted for a night under observation all the investigation were done and advised him to avoid oily foods, quite smoking, reduced weight, walk daily and medicine was prescribed of statin group with methylcobalamin. Patient was kept on washing period for three weeks and advised come after three weeks. The patient consulted in GOPD of our institute for reduction in abdominal obesity. His GOPD card no was 2018/Aug/25165, with complaints of lethargyness, cramps in legs and some time heaviness in chest and abdomen. Patient had no family history of diabetes, hypertension. He screened for the project of central obesity and placed him in Obese class I. During physical and medical and laboratorial investigation his height, BW, Blood pressure (BP), temperature, pulse rate (PR), basal metabolic Index (BMI), waist circumference (WC), waist-hip-ratio (WHR), sagital abdominal diameter (SAD) and Lipid profile, Kidney function test, liver function test, Hemogram, BS(F), were recorded, the values was as shown in table-I & II baseline.

III. INTERVENTION AND OBSERVATION

For the above said sign & symptoms and laboratory investigation, he was advised to take Unani pharmacopeial preparation JB 7 gm twice a day with lukewarm water empty stomach and also advised to take oil free diet of 2800 calories per day and plenty of oral fluids, brisk walk daily at least 5 km with light aerobic exercise five days in a week. JB is a semisolid sugar based preparation of ingredients of *Heel Kalan* (*Amomum subulatum* Roxb.); *Bisbasa* (*Myristica fragrans* Houtt.); *Saleekha* (*Cinnamomum aromaticum*); *Heel Khurd* (*Elettaria cardamomum* (Linn.) Maton); *Zanjabeel* (*Zingiber*

officinale Roscoe); *Darchini* (*Cinnamomum zeylanicum* Blume); *Asaroon* (*Asarum europaeum* Linn.); *Filfil Siyah* (*Piper nigrum* Linn.) *Qaranful* (*Syzygium aromaticum* Merr. & L.M. Perry). The Action of drugs are mentioned as *Muqawwi-e-Meda* (stomachic), *Kasir-e-Riyah* (carminative), *Daf-e-Qai* (Antiemetic), it is useful in *Zof-e-Meda* (Weakness of Stomach), *Zof-e-Hazm* (Dyspepsia/Loss of appetite), *Bawaseer Badi* (Non Bleeding Piles), *Nafkh-e-Shikam* (Flatulence), Central obesity etc [17]. Patient was advised to visit every fifteen days in GOPD for examination. Patient regularly visited in GOPD of institute for clinical examination and laboratory investigation as per the advised. He quit smoking from the day one of treatment and started brisk walk daily for 5 km on treadmill followed by strenuous exercise, avoid all oily food, junk & fast foods and cold drinks. The laboratory investigation was carried out on second week, sixth week and eight week during the treatment. At every visit weight, WC, WHR, SAD, BP, temperature, PR and RR were recorded. At the base line his BP was 114/71 mmHg, PR-58/min, Height -184 cm, BW -94 kg, BMI-27.4 kg/m², WC 99cm, WHR 0.91 on Low Risk of CVD and SAD 28cm and BS (F) 87.31 mg/dl, total cholesterol Level 223.9 mg/dL, Triglycerides 430 mg/dL, Very Low Density Lipoprotein (VLDL) 195.45 mg/dL, Low Density Lipoprotein (LDL) 98.92 mg/dL, High Density Lipoprotein (HDL) 38.98 mg/dL, and lethargy and cramps/pain in leg on visual analogue scale (VAS) +++ & ++ respectively. At the end of the 8 weeks treatment with JB significantly reduced the markers levels at different point of time was as shown in table I & II.

Table 1. Patient's lipid profile and blood sugar (f) results

Parameters	Base line	8 th Week
Serum Cholesterol (mg/dl)	223.9	127.9
S. triglycerides (mg/dl)	430.0	185.95
Serum HDL (mg/dl)	38.98	43.4
Serum LDL ((mg/dl)	98.92	38.51
Serum VLDL (mg/dl)	195.45	46.54
Blood Sugar (F) (mg/dl)	87.31	99.13

Table 2. Patient's anthropometric parameters and other sign & symptoms

Parameters	Base line	8 th Week
Weight (Kg)	94	84
BMI (m ³)	27.4	24.8
Blood Pressure (mmHg)	114/71	108/67
Pulse rate (/min)	58	67
WC (cm)	99	93
WHR	0.91	0.85
SAD (cm)	28	24
lethargy	+++	+
Legs pain	++	-

IV. RESULTS

He quit smoking from the day one of treatment and started walk daily for 5 km, avoided sweet and oily foods during the entire period of treatment. The results showed in column 3 of table 1 & 2 clearly define difference in all the parameters in comparison to baseline after 8 weeks of treatment. These results indicate the positive effect in reducing the obesity, lipid profile as well as over all well being in the patient. No adverse effects were reported during the treatment. This case provided the support for using JB treatment in the management of hypercholesterolemia.

Literature search showed that many Unani single drugs of JB showed their cholesterol lowering activity in different studies e.g. Heel Kalan (*Amomum subulatum* Roxb.) [18]; Bisbasa (*Myristica fragrans* Houtt.) [19]; Heel Khurd (*Elettaria cardamomum* (Linn.) Maton) [20]; Zanjabeel (*Zingiber officinale* Roscoe) [21]; *Darchini* (*Cinnamomum zeylanicum* Blume) [22]; *Filfil Siyah* (*Piper nigrum* Linn.) [23] & *Qaranful* (*Syzygium aromaticum* Merr. & L.M. Perry) [24]. JB has significantly reduced body weight, BMI, WC, HWR, SAD, serum cholesterol, serum triglycerides, serum LDL and VLDL in comparison to base line with end of the study as shown in table I and II. This is a first report of antihyperlipidemic activity of JB. With this single-subject study, we must consider other possible causes for the results besides the treatment intervention. Although the patient indicated that he changes his diet or lifestyle for hypercholesterolemia/dyslipidemia during the course of treatment with Unani pharmacopeial drugs JB. Maximum ingredients of JB is of hot and dry in temperament in nature that counter the temperature of *Khilt-e-Balgham*. Such kind of drugs works on the concept of heterotherapy ('*Ilāj bi'l-Didd*'). The use of drugs and diets of opposite temperament normalize the morbid temperament (*Ta'dil-i Mizāj*) by removal of the causative factor (*Izāla-i Sabab*), evacuation of morbid material (*Tanqiya*) [13].

IV. DISCUSSION

Hypercholesterolemia can be explained through the principles of Unani philosophy. This case demonstrated that how Unani preparations may be effective in the management of hypercholesterolemia/dyslipidemia. Further high quality studies with randomized clinical trials should be conducted to better understand the effectiveness of this treatment.

VI. RECOMMENDATION

We can say that the drug JB is safe & cost effective and may be helpful to the patients of obesity, hypertension, CHD, metabolic syndrome etc. JB can control and prevent hyperlipidemia/ dyslipidemia and also reduces the risk of CHD and other diseases and also enhance the life expectancy.

Conflict of interest: None

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