Case Report

ISSN: 2454-5023
J. Ayu. Herb. Med.
2020; 6(1): 4-8

www.ayurvedjournal.com
Received: 16-02-2020
Accepted: 13-03-2020

Therapeutic effect of 'Qurs-i-Ziabetus Khas' in Diabetes Mellitus – A Case Report

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ABSTRACT

Diabetes mellitus (DM) is a chronic metabolic disease characterized by hyperglycaemia due to absolute or relative deficiency of insulin. Nearly 382 million people have been suffered from DM by 2013 AD, which may increase up to 592 million by 2035 AD. The main clinical presentations of DM are polyuria, polydipsia and polyphagia. This disease can produce many complications such as diabetic ketoacidosis, retinopathy, renal failure, peripheral neuropathy, autonomic neuropathy, arthropathy, hyperosmolar nonketotic coma, diabetic foot, myocardial ischemia, intermittent claudication etc. In Unani Medicine, diabetes mellitus is referred as *Dhayābītus Shakri* (DS), which has been classified under '*Amraz-i-Kulyā*' (renal diseases) on the basis of clinical presentations such as polyuria and glycosuria. In this case, *Qurs-i-Ziabetus Khas*, a pharmacopoeial compound drug, two tablets twice in a day just before meal was given orally to a newly diagnosed case of DM for a period of two months. The clinical features such as polyuria and polydipsia, and laboratory parameters such as fasting blood glucose level, postprandial blood sugar level, HbA1c and mean plasma glucose level were assessed. His clinical features were completely subsided; and blood sugar levels, HbA1c and mean plasma glucose level were significantly decreased. Hence, the study is suggested that *Qurs-i-Ziabetus Khas* may be given to patients of diabetes mellitus under medical supervision for better compliance.

Keywords: Diabetes Mellitus, Unani Medicine, *Qurs-i-Ziabetus Khas*.

INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disease characterized by elevation of blood glucose level due to absolute or relative deficiency of insulin [1, 2]. The metabolism of carbohydrates, fats and proteins are also affected due to deficiency of this hormone [3]. The insulin is produced from the β-cells of pancreas and play important role in the metabolism of the above mentioned nutrients. The DM has been classified into two types: (i) Insulin Dependent Diabetes Mellitus (IDDM) in which absolute deficiency of insulin is found in the body and patients are solely dependent on exogenous insulin (ii) Non-Insulin Dependent Diabetes Mellitus (NIDDM) in which relative deficiency of insulin is found. The insulin resistance is considered as an important cause of this type of DM in which body cells fail to utilize insulin properly [4]. Diabetes mellitus is an age old disease which has been documented by Egyptian civilization approximately 3000 years ago [5]. This is a worldwide health problem that affects increasingly people every year. It is considered as the third leading cause of death (after heart disease and cancer) in many developed countries [6]. Approximately 382 million people have been suffered from this disease by 2013 AD, which may increase up to 592 million by 2035 AD [7]. The main clinical features of DM are polyuria, polydipsia and polyphagia. Long standing cases of DM can produce several life threatening complications such as diabetic ketoacidosis, retinopathy, renal failure, peripheral neuropathy, autonomic neuropathy, arthropathy, hyperosmolar nonketotic coma, diabetic foot, myocardial ischemia, intermittent claudication etc [3]. In Conventional medicine, the treatment of DM is based on the administration of insulin and oral hypoglycaemic drugs viz. glimepiride, glibenclamide, gliclazide, glyburide, glipizide, metformin, troglitazone, pioglitazone, rosiglitazone, acarbose etc [5].

In Unani system of medicine, diabetes mellitus is referred as *Dhayābītus Shakri* (DS), which has been classified under '*Amraz-i-Kulyā*' (renal diseases) on the basis of clinical presentations such as polyurea and glycosuria [8]. Jalinus (Galen) has described that the weakness of *quwwat-i-mughayyara* (transformative faculty) and *quwwat-i-masika* (retentive faculty) of kidney are the leading causes of this disease. This disease is mentioned in many classical Unani texts such as '*Al-Qanoon fi al-Tīb*' (Ibn Sina), '*Kamil al-Sanā*' (Ismail Jurjani), '*Kitab al-Ta'seer fi al-Madawa-al-Tadbeer*' (Ibn Zuhar), '*Ikseer-i-Azam*' (Azam Khan) etc [9-12]. In Unani Medicine, the *Dhayābītus* is classified into two types i.e. (i) *Dhayābītus Sada* also known as *Dhayābītus Ghair Shakri* characterized by excessive thirst and polyuria without glycosuria, and (ii) *Dhayābītus Shakri* which is characterized by excessive thirst, polyuria with glycosuria. Further, *Dhayābītus Shakri* is classified

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into two types according to the intensity and onset of the disease i.e. (i) *Dhayābītus Hār* which is an acute type and characterised by polydipsia and polyuria. This type is mainly caused by *su-i-mizaj hār sada* (hot temperament without involvement of humour) of kidney and is manifested by excessive heat in the flanks and excessive dryness of the body. (ii) *Dhayābītus Bārid* is considered as chronic type characterized by less intensity of polydipsia and polyuria [8, 12, 13]. Many pharmacopoeial compound formulations such as Sufoof-i-Ziabetus, Kushta Zamarrud [14-16], Qurs-i-Kafoor [12-14], Qurs-i-Tabasheer [13, 14], Sufoof-i-Sandal Ziabetus Wala [13, 14, 16], Qurs-i-Ziabetus [12-14], Arq-i-Ziabetus [14], Ma-us-Sha'eer, Qurs-i-Tabasheer Kafoori, Sufoof-i-Gilo, Sufoof-i-Banslochan, Qurs-i-Marjan, Qurs-i-Marwareed, Sufoof-i-Sandal [13], Qurs-i-Gulnar [12, 13], Sufoof-i-Hindi [15], Qurs-i-Ziabetus Khas, Qurs-i-Ziabetus Sada [17] are prescribed for the treatment of Diabetes mellitus. A study has reported that a Unani pharmacopoeial formulation which contains Samag-i-Arabi (*Acacia Arabica* Willd. var. Indica Benth.), Gulnar (*Punica granatum* Linn.), Damm al-Akhwain (*Pterocarpus marsupium* Roxb.), Shib-i-Yamani (Almunium sulphate), Badam (*Prunus amygdalus* Baill.) and Kateera (*Sterculia urens* Roxb.) possess significant effect in cases of diabetic nephropathy as compared to control drug [18]. Another study has been carried out on 20 patients of Diabetes mellitus Type-2 for a period of 150 days in which a coded Unani formulation (UNIM- 210) showed significant result [19].

CASE REPORT

Brief History

A 39 year old male patient came to the OPD of Regional Research Institute of Unani Medicine, Srinagar, Jammu & Kashmir, India in the month of October 2019 with the complaints of excessive thirst and polyuria. Same day, he was diagnosed as a case of Diabetes mellitus Type- 2. His fasting blood sugar level was 202.3 mg/ dl. He had gone for HbA1c on 21.11.2019 and it was 9.0 %. He has family history of Diabetes mellitus. His sister and cousin brother are suffering from this disease. Simultaneously, he was suffering from sore throat, sneezing, rhinorrhoea and dry cough for which he was treated by Unani drugs and got complete relief. The patient was interrogated about cardiovascular and renal diseases, retinopathy, neuropathy and other diseases. But, he was not suffering any such diseases. He was also interrogated about fever and other infectious diseases which were not found.

Examination of the Patient

The general condition of the patient was found to be normal. His built was slightly obese. His pulse rate, body weight and blood pressure were recorded as 78/ min, 80 kg and 130/90 mmHg, respectively on the first visit. The *mizaj* (temperament) of the patient was recorded in a proforma and found to be *balghami* (phlegmatic). Systemic examination of the patient was also done but no abnormalities were found. The disease was diagnosed on the basis of clinical features and laboratory investigations.

Management of the patient

The patient was treated with oral administration of a Unani pharmacopoeial formulation for a period of 2 months.

Qurs-i-Ziabetus Khas

This is a tablet form of Unani drug which was prepared by the Indian Medicines Pharmaceutical Corporation Limited (IMPCL) as per National Formulary of Unani Medicine (NFUM). The patient was advised to take two tablets twice in a day just before meal.

Ingredients of Qurs-i-Ziabetus Khas [17]

S. No.	Ingredients	Ratio
1.	Tabasheer (*Bambusa arundinacea* (Retz.) Roxb.)	25 g
2.	Satt-i-Gilo (*Tinospora cordifolia* (Willd.)Miers.)	25 g
3.	Maghz-i-Khasta Jamun (*Eugenia jambolana* Lam.)	50 g
4.	Gurmar Buti (*Gymnema sylvestre* R. Br)	50 g
5.	Kushta Baiza-e-Murgh (Calx of egg shell)	10 g
6.	Kushta Zamarrud (Calx of Emerald)	10 g
7.	Loab-i-Aspaghol (*Plantago ovata* Forsk.)	Q. S.

Dietary and Life style modification

The patient was advised to avoid taking sugar and rich carbohydrate containing diets such as potato, rice, sweat items, sugar containing tea, fatty diet etc. He was advised to take green leafy vegetables, bread, fibres containing diet etc. The patient was also advised for morning walk daily for 15 minutes.

Measures and outcome

The patient was assessed clinically and on the basis of laboratory investigation. The clinical features such as excessive thirst and polyuria were significantly decreased during the treatment period **(Table 01)**. The fasting and postprandial blood glucose levels were also significantly reduced **(Table 02 & Graph 01)**. The HbA1c and mean plasma glucose level were also significantly decreased **(Table 03 & Graph 02)**.

Clinical findings:

Table 1: Clinical features during the treatment period

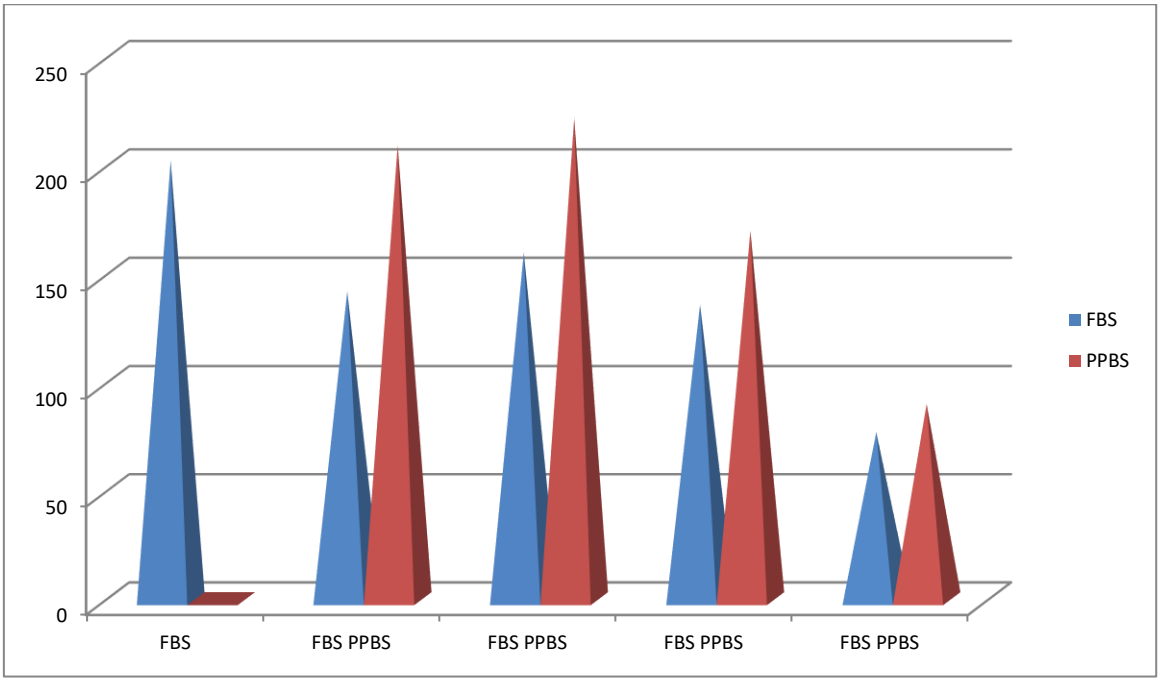
Clinical features & vitals	Base line 18.10.2019	1st follow-up 28.10.2019	2nd follow-up 08.11.2019	3rd follow-up 21.11.2019	4th follow-up 29.11.2019	5th follow-up 13.12.2019	6th follow-up 20.12.2019
Excessive thirst	+++	++	-	-	-	-	-
Polyuria	+++	++	-	-	-	-	-
Pulse Rate	78/ min	72/ min	78/ min	78/ min	72/ min	78/ min	80/ min
Blood Pressure	130/ 90 mmHg	130/ 90 mmHg	130/ 80 mmHg	130/ 90 mmHg	130/ 90 mmHg	130/ 90 mmHg	130/ 90 mmHg
Body weight	80 kg	80 kg	80 kg	79 kg	79 kg	78 kg	78 kg

Table 2: Laboratory findings of blood sugar level

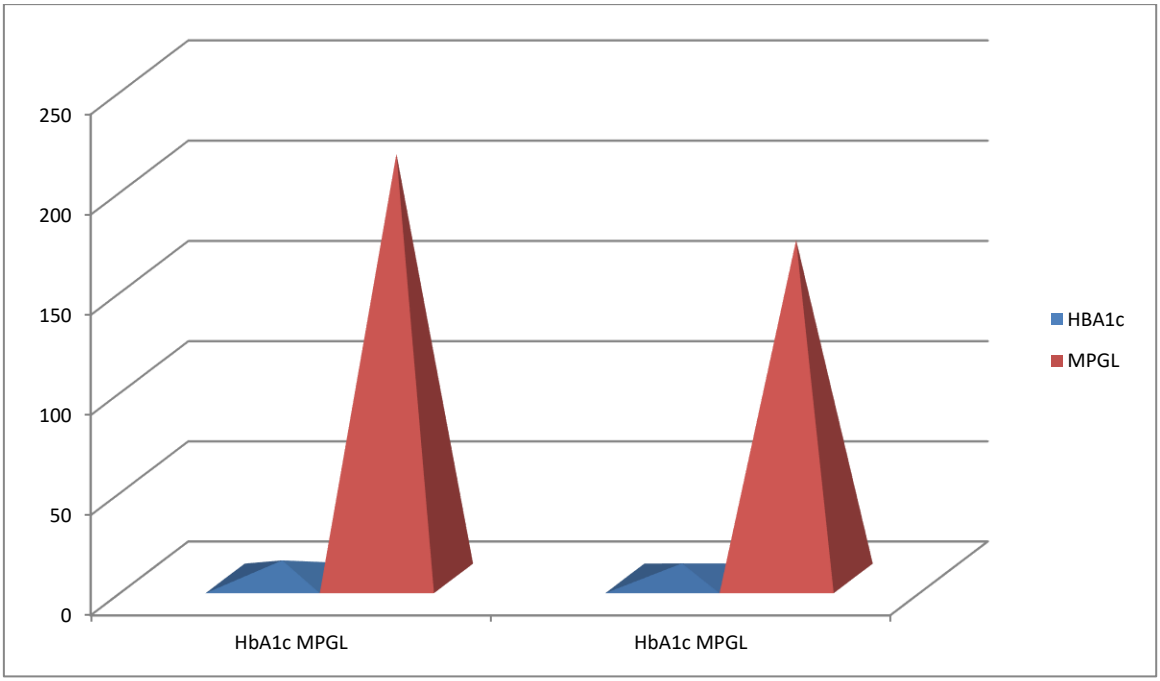
Findings	18.10.2019	25.10.2019	07.11.2019	21.11.2019	19.12.2019
Fasting blood sugar	202.3 mg/ dl	142 mg/dl	160 mg/ dl	136 mg/ dl	77 mg/ dl
Postprandial blood sugar	Not done	209.5 mg/ dl	222 mg/dl	170 mg/ dl	90 mg/ dl

Table 3: Laboratory findings of HBA1c and Mean plasma glucose

Findings	21.11.2019	21.12.2019
HbA1c	9.0%	7.5%
Mean plasma glucose level (MPGL)	212 mg/ dl	169 mg/dl



Graph 1



Graph 2

DISCUSSION

The Unani system of medicine possesses effective treatment of various diseases include Diabetes mellitus. Qurs-i-Ziabetus Khas, a pharmacopoeial formulation was given to the patient for a period of 2 months. This tablet form compound drug contains four plant origin drugs such as *Bambusa arundinacea*, *Tinospora cordifolia*, *Eugenia jambolana* and *Gymnema sylvestre*; one animal origin drug such as Calx of egg shell; and one mineral origin viz. Kushta Zamarrud. Some scientific studies have carried out on the above mentioned botanical drugs and showed significant anti-diabetic effect. For instance, Ravi K et al. 2004, has conducted anti-diabetic activity of different samples of *Eugenia jambolana* on streptozotocin-induced diabetic rats in which they found significant hypoglycaemic effect of ethanolic extract of kernel at a concentration of 100 mg/ kg. Other parameters such as blood urea, cholesterol, increased glucose tolerance; total proteins and liver glycogen, activities of glutamate oxaloacetate transaminase and glutamate pyruvate transaminase were also significantly decreased [20]. Sridhar SB et al. 2005, has carried out preclinical evaluation of the anti-diabetic effect of *Eugenia jambolana* seed powder in streptozotocin-induced diabetic rats in which they found significant hypoglycaemic effect and reduction of liver glycogen on 500 mg/ kg and 1000 mg/ kg dose levels of the test drug [21]. Rajalakshmi M et al. 2009 has reported the significant anti-diabetic property of methanol extract of *Tinospora cordifolia* stem in rats. This study has also suggested that the test drug possesses regeneration activity of β-cells [22]. Mall GK et al. 2009 has carried out anti-diabetic and hypolipidemic activity of aqueous extract of *Gymnema sylvestre* on three dose levels i. e. 400, 600 and 800 mg kg^{-1} in alloxan-induced diabetic rats. This study has showed significant reduction in fasting blood sugar level, cholesterol and serum triglyceride on particularly higher dose level [23]. In Conventional medicine, the serious complications of DM such as nephropathy, retinopathy and neuropathy cannot be minimized even after introduction of many new generations of anti-diabetic drugs. Furthermore, attenuation of adverse effects due to allopathic drugs is still a challenge assignment for the well developed medical science. The Unani Medicine is based on holistic approach and drugs produce cumulative effect. Drugs which are used for the treatment of Diabetes mellitus they strengths *quwwat-i-mughayyara* (transformative faculty) and *quwwat-i-masika* (retentive faculty) of body cells and ultimately utilization of glucose in the cells is increased which causes decrease of blood sugar level.

CONCLUSION

In Conventional medicine, many sugar lowering agents such as exogenous insulin and oral hypoglycaemic drugs viz. sulfonylureas, biguanides, thiazolidinediones, α-glucosidase, meglitiridesare etc are used as monotherapy or in combination but they produces several adverse effects viz. severe hypoglycaemia, lactic acidosis, liver cell damage, headache, dizziness, digestive discomfort etc. In present scenario, major population of the world is preferred traditional medicine for their health care issues. The Unani system of medicine is one of the traditional medicines of India which plays significant role in the treatment of various ailments. Several scientific studies have reported significant therapeutic efficacy with least adverse effects of various herbs and phytoconstituents in the management of diabetes mellitus. In this case, the patient got complete relief from the signs and symptoms of diabetes and no sign of adverse reaction of the drug was noted. The blood sugar levels and other laboratory findings were also significantly reduced. Hence, it is recommended that Qurs-i-Ziabetus Khas may be given to patients of diabetes mellitus under medical observation.

Declaration of patient consent

The written consent was taken from the patient to publish his case in the journal. In the consent form, the patient was given his consent for clinical information to be reported in the journal. The patient understand that his name and initial will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Source of Support: Nil.

Conflict of Interest: None declared.

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HOW TO CITE THIS ARTICLE
Ansari AP, Nasir A. Therapeutic effect of 'Qurs-i-Ziabetus Khas' in Diabetes Mellitus- A Case Report. J Ayu Herb Med 2020;6(1):4-8.