



ORIGINAL RESEARCH PAPER

Unani Medicine

UNANI HERBAL MEDICINE AS AN ADJUVANT THERAPY IN TREATMENT OF DIABETES MELLITUS: A REVIEW STUDY

KEY WORDS: Hyperglycemia, Diabetes Mellitus, Dietotherapy, Unani System Of Medicine..

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ABSTRACT Diabetes Mellitus is a multifactorial metabolic disorder characterized by persistent hyperglycemia caused by absolute or relative insulin deficiency, causing abnormalities of carbohydrates, proteins & lipid metabolism and significant & significant disturbance of water and electrolytes. According to WHO the worldwide prevalence of Diabetes mellitus was estimated to be 317 million in 2012 and is projected to rise up to 750 million by the year 2030. Unani Physicians were very much familiar to the symptoms and complication of the disease. *Ibne Sina* in his book *Al Qanoon* has described about the symptoms like polydipsia, polyuria and mentioned gangrene among its complication. In present treatment modalities insulin and various oral hypoglycemic agents are being used being have some adverse effects and are not capable enough to combat the complications. Unani System of Medicine deals with several means of treatment, that can be aided as an adjuvant therapies. The effect of Unani medications is proved to have a hypoglycemic effect and these can be used as an adjuvant along with the dietotherapy in present scenario to reduce the risk of complications. This review paper will discuss the potential of Unani treatment as an adjuvant therapy in diabetes mellitus.

Introduction

Diabetes is a group of metabolic disorder characterized by Hyperglycemia resulting from defects in insulin secretion, its sensitivity or both. World wide it affecting more than 300 million people. India has today become the Diabetic capital of the world with over 20 million diabetes and this number is yet too increased to 57 million by the year 2025. Diabetes is ranked 7th among the leading cause of death and is considered 3rd when its fatal complications are taken into account. For this, therapies developed along the principles of conventional medicine are often carry the risk of adverse effects and are often expensive, especially for the developing world. Therefore, treating diabetes mellitus with plant derived compounds which are accessible easily [1-3].

The word diabetes is derived from Greek word of, "*diabanein*" which means to "passing through" or "run through" or "siphon" in reference to the excessive urine produced as a symptom of this disease. In Unani system of medicine, diabetes described by various Greek and Arabic vernaculars as synonyms of diabetes are "*Ziabetas*", "*Ziasaqus*", "*Qaramees*", "*Dawar*" (giddiness), "*Dolab*" (water wheel) and "*Zalaqul kulliya*" (slippery nature of the kidneys or diarrhoea of the kidneys)[4,5]

Concept of Diabetes Mellitus (*Ziabetus Shakari*) in Unani System of Medicine

In classical Unani literature, most of the Unani physicians have described *Ziabetas* or *Siyabates* with its number of Greek and Arabic vernaculars and defined *Ziabetas* symptomatically as characterized by excessive thirst and increased frequency of urination soon after taking fluid. It was described by various Greek vernacular as synonyms of diabetes like "*Ziabetas*", "*Ziasaqus*" and "*Qaramees*" and also by different Arabic vernacular like "*Dawar*" (giddiness), "*Dolab*" (water wheel) and "*Zalaqul kulliya*" (slippery nature of the kidney or diarrhea of the kidneys) [6, 7, 8, 9, 10,]. The various classical text books also contain detailed

descriptions of this disease, differentiating its distinguished features from other diseases known as *tashkhees e fariqa* [10, 11,12, 13,].

Ibn Sina stated in his book of *al qanoon fit tib*, the word diabetes is derived from Greek word of, "*diabanein*" which means to "passing through" or "run through" or "siphon" in reference to the excessive urine produced as a symptom of this disease. They investigated it, thoroughly and have prescribed various treatments. Patients feel thirsty, the amount of water uptake by kidney, simply does not match by the amount of water drunk by the patients and soon after taking water, it is excreted out. The causes of disease are *sue e mizaj wa zauf e kulliya, masana wa jigar* (disordered temperament and weakness of kidney, bladder and liver) [6].

Zakariya Razi stated in his book *Kitabul Havi* that dribbling of urine is the only complaint of the disease because whatever enters to the bladder gets excreted immediately without being held. The patient feels excessive thirst, drinks plenty of water and whatever he drinks get expelled without any changes. In this disease conditions the temperature of kidneys become hot due to which it absorbs water, but due to weakness of its retention power (*Quwat e masika*) it eliminate *rutubath* towards bladder i.e. the bladder does not absorbs water from kidney. Kidneys tend to suck fluid from vessels and absorb it. The vessels suck fluid from liver and the liver absorbs it from stomach and intestine. Consequently the patient feels excessive thirst and drinks plenty of water. But the fluid gets micturated and the problem persists as such. It is difficult to cure [7].

The Mizaj (Temperament) of *Ziabetas Shakari* (diabetes mellitus)

Most of the Unani scholars believe that diabetes is caused due to *Su'e Mizaj Balghami* (abnormal phlegmatic temperament); which

is also caused by cold and moist humor [11,13].

Classification of *Ziabetas* according to Classical Unani Literature

According to the presence or absence of sugar in the urine, *Ziabetas* is divided into two types:-

1) *Ziabetas Sada*: Which is also called *Ziabetas ghair shakari*. It is characterized by excessive thirst and excessive urination but there is no sugar in the urine [11, 12, 13, 14].

2) *Ziabetas Shakari*: This is characterized by excessive thirst and urination and presence of sugar in the urine. In this disease patient has excessive thirst and takes plenty of water and passes all the water he consumed without any metabolic changes. *Ziabetas Shakari* has been correlated with type 2 diabetes mellitus and described accurately the clinical features and specific complications of disease in classical Unani literature [11-14].

According to the *khiffat* and *shiddat* (intensity) of the sign and symptom, it is also divided into two types:

1) *Ziabetas Haar*: Acute symptoms of the *Ziabetas* with abrupt onset occur like excessive thirst (polydipsia) and increase urination (polyuria) with other symptom and sign of *sue mizaj haar* like heat in flanks and dryness of the body, due to *sue mizaj haar sada* of kidneys [11-14].

2) *Ziabetas Barid*: In which the thirst and frequency of urine is comparatively less. In this disease *mizaj* of kidneys disturbed so they absorb water from blood and send to the urinary bladder immediately due to weakness in *Quwate Masika* (retentive power). It has also been described that the kidneys attract the watery substance of blood, but the urinary bladder does not attract anything. Therefore kidneys attract the water from the circulation, liver, stomach and intestine, because of which patient has the immoderate thirst (polydipsia) [11- 14].

Etiopathogenesis Described in the Classical Unani Literature

Unani physicians described some underline etiopathogenesis in classical Unani literature. The important etiological features mentioned in Unani are following:

1) *Zaufe Gurda* (Weakness of Kidney)

Water cannot retain properly due to weakness in kidneys and its *Quwwate masika* (retentive faculty) and kidneys are unable to metabolize the water [11, 13, 16, 17].

2) *Ittesae Gurda wa Majrae Baul* (Dilatation of Kidney and Tubule)

Water cannot be retained for longer duration due to dilatation of *Gurda wa Majrae Baul*. So it passed out rapidly (polyuria) [6, 13, 16].

3) *Buroodate Badan, Jigar wa Gurda*

Sometimes *Ziabetas* develops due to excessive exposure of cold in whole body or liver or kidney, which leads to *sue mizaj barid* (cold derangement in temperament) [6, 11, 13, 16].

4) *Sue Mizaj Haar Gurda* (Hot derangement in temperament of kidney)

Kidneys absorb water from circulation due to excessive hotness or derangement in temperament. Therefore they cannot retain much amount of fluid and pass in the form of urine frequently (polyuria) to overcome the thirst [11, 13, 16].

5) *Sue Mizaj Barid Guard* (Cold derangement in temperament of kidney)

Sometimes *Ziabetas* develop due to excessive exposure of cold to kidney which may lead to *sue mizaj barid* [11, 13, 16].

Symptoms of *Ziabetus Shakari* in the classical Unani literature:

1. Excessive thirst [6, 7, 15]
2. Frequency of urination [6, 7, 15]
3. Dribbling of urine [7]

4. Urine appears white, losing its consistency to resemble like water [15]
5. Excessive micturition without burning sensation [15].
6. Incontinence of urine [8]

Complications of *Ziabetus Shakari* are especially enumerated by ancient Unani physicians:-

Zooban (Emaciation of the body), develops due to excessive dehydration of the body which cannot overcome by intake of water [16] Collapse of the sexual functions and diabetic gangrene [6] General debility [11]

Discussion

Management of Diabetes Mellitus by Unani Herbal Medicine

Diabetes in its early stages is curable by using Unani herbal medicine. Since antiquity, diabetes has been treated with plant medicines. Recent scientific investigation has confirmed the efficacy of many of these herbs, some of which are remarkably effective. Only those herbs that appear most effective are relatively non-toxic and have substantial documentation of efficacy are covered here.

Herbal medicines are being used by about 80% of the world population. The natural products are considered the best because of better acceptability, safety and efficacy, potency, inexpensive with least side effects. Several herbal medicines and supplements have been potential therapeutic agents in the management of Diabetes and its related complications. Given that over 800 plants are listed with anti diabetic potential and proven anti diabetic efficacy. Patients seem to demand more and more safe and effective medicinal compound to better manage diabetic complications [18-23].

The Unani system of medicine is found very effective in treating chronic diseases related to respiratory, gastro-intestinal, cardiovascular, central nervous, dermatological, inflammatory disorders and diabetes especially. For instance there are some oils that can affect the hormonal balance in the body directly or indirectly. As a direct action, the oils work as phyto hormones in the same way as that an animal or human hormone would work on the body. The oils also act indirectly by triggering a particular gland into action or by balancing hormonal secretion in some way. Thus black pepper, fennel and juniper oils have a restoring and rejuvenating affect on the pancreas, while carrots, eucalyptus, geranium, lemon oils in inhalation, massage, bath or in the form of tea are insulin stimulants. Some medicinal plants such as *Jamun*, *Pyaz*, *Darchini* & *Kachnar* (*Bauhinia variegata*), *Satte Gilo* (*Tinospora cordifolia*), *Tukhme Methi* (*Trigonella foenum-graecum*), *Klaonji* (*Nigella sativa*), *Tukhme Hyat* (*Witania coagulans*), *Tukhme Karela* (*Momordica charantia*), *Chiraita* (*Swertia chiratyta*), *Lahsun* (*Allium sativum*), *Gurmar Booti* (*Gymnemma sylvester*), *Tabasheer* (*Bambusa bambos*), *Maghze kanwal Gatta* (*Nelumbo nucifera*), *Tukhme Hulba*, *Panba Dana* (*Gossypium herbaceum* Linn) *Talhab* (*Spirulina platensis*). *Safoofe Ziabetus*, *Qurs Tabasheer*, *Safoofe Hindi*, etc are documented in unani classical texts [23-27].

Advantages of Herbal Unani Medicine [28]

1. Mostly herbal drugs are well tolerated by the patient, having fewer unintended consequences and fewer side effects than traditional medicine, and may be safer to use.
2. Herbal drugs are more effective for long-standing health complaints that don't respond well to traditional medicine.
3. Cost of herbal drugs is much less than prescription medications. Research, testing, and marketing add considerably to the cost of prescription medicines. Herbs tend to be inexpensive compared to drugs.
4. Herbs are available without a prescription. Simple herbs, such as peppermint and chamomile, can be cultivated at home.

Mechanism of Action of Herbal Anti-diabetics ^{9,29,30,31} The antidiabetic activity of herbs depends upon variety of mechanisms. The mechanism of action of herbal anti-diabetic may be.

- α -amylase inhibition.
- Inhibition in renal glucose reabsorption.
- Stimulation of insulin secretion from beta cells of islets or/and inhibition of insulin degradative processes.
- Cortisol lowering activities.
- Insulin resistance reduction.
- Providing certain necessary elements like calcium, zinc, magnesium, manganese and copper for the β -cells.
- Increasing the size and number of cells in the islets of Langerhans.
- Stimulation of insulin secretion.
- Stimulation of glycogenesis and hepatic glycolysis.
- Inhibition of β -galactosidase and α -glucosidase.
- Improvement in digestion along with reduction in blood sugar and urea.

Scientific Report:

- 1) Some scientific reports proves the antidiabetic effects of Unani herbal medicines. The antidiabetic activity of the methanolic extract of *Strychnos nuxvomica* was evaluated in normal and alloxan induced diabetic rats. The study indicated that the methanolic extract of *Strychnos nuxvomica* is a potent antidiabetic and antioxidant agent. [32]
- 2) A study was conducted to evaluate the antidiabetic effects of *Piper nigrum* in alloxan induced diabetic rats, reported that *P. nigrum* is useful in controlling not only the glucose and lipid levels but may also be helpful in strengthening the antioxidants potential. [33]

Conclusion

Unani herbal medicines plays important role in the management of Diabetes. Besides the fundamental importance of this pharmacotherapeutic methodology there is a problem of lack of uniform standardisation. It therefore apparently seems essential to standardize them and to develop certain scientific parameters for evaluation of the efficacy of these drugs as it is cost effective, user friendly devoid of adverse effects. Hence scientific studies are being under taken to validate these age old drugs in different Unani research institutions of India so that the benefits may be reaped by large section of society.

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