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Diabetes and Unani herbal medicine: A review

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Abstract
Ziabetus Shakri is a disease in which the consumed water is passed out through the kidney immediately after intake by the patient. Plants have played a significant role in human health and life for thousands of years. Using herbal or natural medicines for the treatment of diabetes and its complications has a long and extensive history.

Keywords: Diabetes, herbal, Ziabetus Shakri

Introduction
The word “diabetes” is derived from the Greek word Diabanmo meaning passing through or to run through or siphon, which is characterized by excessive thirst, excessive urination, presence of sugar in urine, increased appetite, gradual loss of body weight etc. [1]. Ziabetus is the terminology used for diabetes, in general, and Ziabetus Shakri for diabetes mellitus, in particular, in Unani system of medicine (USM). These terms are mentioned in most of the Unani literature like Al Qaanon, Al Hawi, Kamilus Sana’ah, etc. Unani Atibba considered that Ziabetus is a disease of kidneys. Arabian physicians described Ziabetus by some other terms also such as Moattasha, Atsha, Zalaqul kulliya, Dolab, Dawwarah, Barkar, Barkarya, and Qaramees [2].
According to Unani medicine, Ziabetus Shakri is a disease in which the consumed water is passed out through the kidney immediately after intake by the patient. It is like the Zalqul Meda wal Ama (irritable bowel syndrome) in which the food passes rapidly through the stomach and intestine without proper digestion. In this disease, the patient feels excessive thirst and takes plenty of water and passes all the water he consumed without any metabolic change (20). The Unani philosophy of disease causation is based on mizaji (temperamental) and saakhti (structural) deviation [3]. Any imbalance between mizaj and saakht (structure) results in disease. In this disease the mizaj (temperament) of kidneys becomes Haar (Hot), so they absorb water from blood circulation and send to the urinary bladder immediately due to weakness in Quwate Masika (retentive power). It has also been described that kidneys attract the watery substance of blood, but the urinary bladder does not attract anything. So, kidneys attract water from the circulation, liver, stomach, and intestines because of which patients feel the immoderate thirst (polydipsia) [4].

Classification of Ziabetus
1. According to the presence or absence of sugar in the urine, Ziabetus is divided into two types [5]:
   Ziabetus Sada (diabetes insipidus), which is also called Ziabetus gair shakari. It is characterized by excessive thirst and excessive urination, but there is no sugar in the urine.
   Ziabetus Shakari (diabetes mellitus), which is characterized by excessive thirst and urination and the presence of sugar in the urine.
2. According to the khiffat and shiddat (intensity) of the sign and symptom, Ziabetus is also divided into two types [6]:

Ziabetus Haar in which acute symptoms of the Ziabetus with abrupt onset occur, such asexcessive thirst (polydipsia) and increase urination (polyuria), with the symptom and sign of other sue mizaj haar, such as heat in flanks and dryness of the body, due to sue mizaj haar sada (excess of heat) of kidneys [7].
Ziabetus Barid in which the thirst and frequency of urine are comparatively less.

Diabetes Type-I

Cause: Sue Mizaj-Har Yabis Khilqi (hot and dry in temparement) Due to increase in heat and dryness, energy (innate heat) dissolute that further dissolutes Ratubat Gharizia (innate body fluid) and material needed for growth results in Asthenia. Increased heat further interferes with nutritive function, but it does not alter the power of Tehseel (acceptance) and Ilsaaq (adherence) because both powers depends on Yabusat (dryness), and in this case dryness is extra enough to potentiate both [8]. Unused material (metabolic by-product) fills up the interstices of organs and interferes with acceptance, but delivery remains continuous from the liver. Vessels fail to deliver their material; this nutrition-loaded blood when reaches the kidney, excess is spilled out because of enhanced Quwwate Jaziba (power of absorption) and inability to utilize all material [9]. Heat and dryness potentiate Quwwate Masika (power of retentive), thus vessels cannot expel their contents and (unused metabolic by-product) contents start to adhere to the wall of vessels [10].

Diabetes Taype-II

Cause: Sue Mizaj-Barid Ratab (Excess of coldness and wet) Above both qualities (Barid and Ratab) interfere with Quwae Ghazia, Masika, and Jaziba and favor the production of fat. Thus, we can say that both causative factors and material are present here for the production of fat, resulting in excess fat deposit. These above qualities make the Quwa Dafi'ah (power of eliminative) hyperactive. So, organ interstices become full of unused material, and thereby blood becomes loaded with nutrients that start to appear in urine [11].

Management of diabetes millets by 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 [12].

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 [13].

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 effects 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 Dammul akhwain, Karela, Jamun, Methi, Pyaz, Gurmar, Darchini etc. are documented in Unani classical texts [14].

Karela (*Momordica charantia* Linn.)

It is very popular for its anti-diabetic properties. It's also rich in micronutrients which are required for prevention of complications of diabetes. Bitter melon, also known as balsam pear, is a tropical vegetable widely cultivated in Asia, Africa and South America, and has been used extensively in folk medicine as a remedy for diabetes. The blood sugar lowering action of the fresh juice or extract of the unripe fruit has been clearly established in both experimental and clinical studies [15].

Dammul Akhwain (*Pterocarpus marsupium* Linn.)

The tree is the source of the Kino of the European pharmacopeas. The gum-resin looks like dried blood (Dragon's blood), much used in Indian medicine. This herb has a long history of use in India as a treatment for diabetes. The flavonoid, (-)-epicatechin, extracted from the bark of this plant has been shown to prevent alloxan-induced beta cell damage in rats. Both epicatechin and a crude alcohol extract of Pterocarpus marsupium have actually been shown to regenerate functional pancreatic beta cells. No other drug or natural agent has been shown to generate this activity [16].

Gurmar (*Gymnema Sylvestre* Linn.)

Gymnema assists the pancreas in the production of insulin in Type 2 diabetes. Gymnema also improves the ability of insulin to lower blood sugar in both Type 1 and Type 2 diabetes. It decreases cravings for sweet. This herb can be an excellent substitute for oral blood sugar-lowering drugs in Type 2 diabetes. Some people take 500 mg per day of gymnema extract [17].

Methi (*Trigonella foenum-graecum* Linn)

Experimental and clinical studies have demonstrated the antidiabetic properties of fenugreek seeds. The active ingredient for the antidiabetic properties of fenugreek is in the defatted portion of the seed that contains the alkaloid trogonelline, nicotinic acid and coumarin.

Jamun (*Eugenia jambolana* Linn)

The fruit and seeds of the Jambul tree have long been used in Eastern traditional medicine. The extract of the jamun pulp showed hypoglycemic activity within 30 min of administration, while the seeds of the same fruit require 24 hours. There was increase in serum insulin level and the extract also inhibited insulinase activity from liver and kidney [18].

Ghekwar (*Aloe vera*)

Aloe Vera is a popular houseplant, has a long history as a multipurpose folk remedy. The plant can be separated into two basic products: gel and latex. Aloe Vera gel is the leaf pulp or mucilage, aloe latex, commonly referred to as "aloe juice," is a bitter yellow exudate from the pericyclic tubules just beneath the outer skin of the leaves. Extracts of aloe gum effectively increases glucose tolerance in both normal and diabetics [19].

Conclusion

Plants have played a significant role in human health and life for thousands of years. Using herbal or natural medicines for the treatment of diabetes and its complications has a long and extensive history. All these herbal drugs discussed in this review exhibit significant clinical and pharmacological activities.

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