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MANAGEMENT OF DIABETES MELLITUS (ZIABETUS SHAKRI) BY CUPPING IN UNANI SYSTEM OF MEDICINE: A COMPREHENSIVE REVIEW

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ABSTRACT

Diabetes being the most known disease of this era and India is the diabetic capital of the world. One of its most serious complications is diabetic foot which results in well-known non- healing ulcer. Scholar, researchers are looking for an alternative approach to tackle and cease the ever-increasing load of diabetes. Unani System of Medicine is one of the oldest and time proven methods to manage this kind of situation. It has entirely different and comprehensible concept of diabetes. According to the basic philosophy of Unani system the diabetes mellitus is the result of disturbance in quantity as well as quality of Akhlat (Humors) and Mizaj (Temperament) which leads to decrease in Hararat-e-Gariziya. This concept clearly describes diabetes, its pathogenesis, complications and holistic approach towards its management. Non-healing ulcer, in conventional medicine, is entirely manageable in Unani system of medicine. Oobjectives of this comprehensive review is to explain the Unani Approach in the management of Diabetes Mellitus and its complications. Consequently, different treatment methods of complementary medicine and recent medicine have been used by scientific communities to control and predict the disease. This article considered the effects of dry cupping and wet cupping, based on traditional medicine and recent studies.

KEYWORDS: Hararat-e-Gariziya, Akhlat, Mizaj, ZiabetusShakri, Asbabe-e-Sitta Zarooriya.

I. INTRODUCTION OF DIABETES MELLITUS (ZIABETUS SHAKRI)

In Unani System of Medicine the word "Diabetes" is derived from Greek language of "Ziabetus", which means, "to run through" or "Siphon", is characterized by hyperglycemia, polyuria, polyphagia, polydipsia and gradual loss of body weight. In Arabic language, diabetes is called as "Ziabeta", "Dolab", "Diaquomous", "Salasulbol", "Berkaria", "Qaramus" and "Zalaqul kulliya". Unani and Arabic physician were well familiar with Diabetes. In the old classical books of USM the comprehensive description of "Ziabetus Shakri", its pathogenesis, complications have been described along with its management. Buqrat (Hippocrates) the Father of Medicine also described its signs and symptoms like excessive urinary flow with loss of body weight.[3-6] Arsyatoos (Aretaeus) and Jalinoos provided the first precise picture of the symptoms of Ziabetus.[4,6] Ibne Sina explained the clinical features of the Ziabetus Shakri (Diabetes mellitus) in "Al-Qanoon Fil Tibb" (The canon of medicine) and mentioned its specific complications like abnormal appetite, gangrene and sexual dysfunction and he also described the sweet taste of diabetic urine.[7] According to the USM Sue Mizaj of kidney and liver along with abnormal life style leads to Ziabetus Shakri.[8,9]

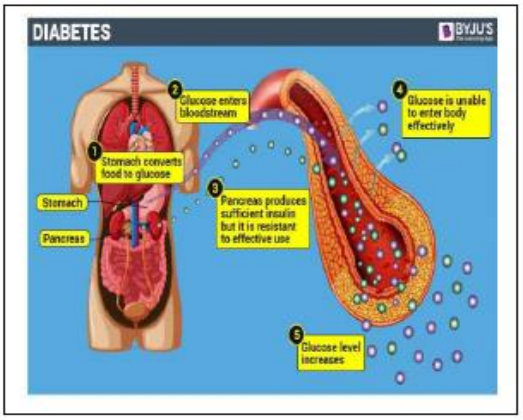

Fig. 01: Diabetes Mellitus (Ziabetus Shakri).

It says that the diabetes mellitus (Ziabetus Shakri) is the result of disturbance in quantity and quality of

Akhlat (humour) and Mizaj (temperament) which decreases the Rutoobat-e-Gariziya and ultimately causes the degradation of Hararat-e-Gariziya. Generally Ziabetus Shakri is due to Sue Mizaj Barid Ratab Umoomi (and various predisposing factors such as excess Harkat, excess Sukoon, Barid aghziya, less or excess diet, excess awakening, excess Istefragh(Evacuation), excess Harkate Nafsani, excess use of Har Aghziya (Hot temperament diet) and sedentary life style catalyse this abnormal condition. All these predisposing factors fall into Asbab-e-Sitta Zarooriya in USM. All these Asbab are modifiable from time to time in case there is any change in then.[10-13]

II. Atiology of Diabetes Mellitus (Ziabetus Shakri)

The concept of Quwa (power/faculties) is unique in Unani system. The Quwa is a property of the body with which the phenomenon of the life is manifested. The Quwa provides the basis for different bodily functions. Each and every organ is furnished with a power through which specific physiological functions are performed by that particular organ. The Quwa is specific for a particular tissue or organ on which the specific functions of that organ depend. The organ is the seat of Quwa, and the Quwa give rise to functions.

There are three major divisions of the Quwa of the body.

- Al Quwa at Tabi'yah (natural faculties).
- Al Quwa at Nafsaniya (psychic or mental faculties).
- Al Quwa at Haiwaniya (vital faculties)

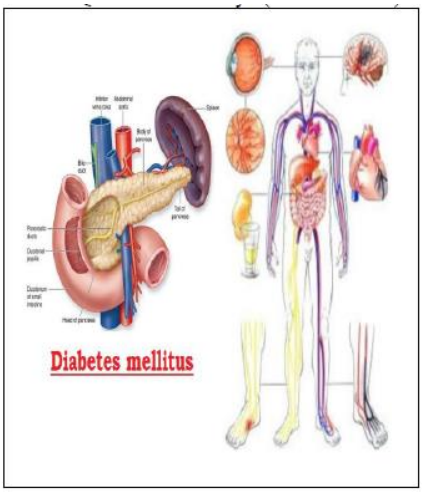

Fig. 02: Diabetes Mellitus (Ziabetus Shakri).

Al Quwa at Tabi'yah are responsible for ingestion, digestion, absorption transformation (metabolism), assimilation of ghiza (food), excretion of waste products, and preservation of the race. According to the function, Quwa at Tabi'yah have been divided by Ali Ibn Abbas Majusi (930- 994AD) into three faculties: Quwate Ghaziya (nutritive faculty), Quwate Namya (growth faculty), and Quwate Muwallida (reproductive faculty). Quwate ghaziya (nutritive faculty) is responsible for ingestion, digestion, absorption transformation (metabolism), assimilation of ghiza (food), and excretion of waste products. According to the function, this faculty is divided into four types: Quwate Jaziba (power of absorption), Quwate masika (power of retention), Quwate hazima (power of digestion) or Quwate mughayira (power of transformation), and Quwate dafi'a (power of propulsion and excretion).

- Quwate Jaziba: This is the power that absorbs the Akhlat (humors) and runs into the cells with thehelp of various enzymes, hormones, or simply through natural forces.
- Quwate Masika: This is the power that retains the Akhlat (humors) inside the cells for their Istahalah (metabolism).
- Quwate Mughayira: This is the power that transforms the materials (such as phosphorylation ofglucose after entering the cells) either into energy or/and makes it to assimilate.
- Quwate Dafi'a: This is the power that helps the cells and tissues expel out the waste products (by-product) produced in the course of istahala

Each and every organ is furnished with a Quwat, as previously discussed, through which specific physiological functions are performed. The organs of digestive faculty (A'zae Hazm) include Banqaras (pancreas) along with oral cavity, salivary glands, esophagus, stomach, intestines, liver, and spleen. Liver is considered the main center of Quwate Tabi'yah. According to Abu Sahl Masihi (Died 1010 AD), each of the above four Quwa are found in two folds: one is found in the gastrointestinal tract (GIT) and liver and the other in all the cells of the body. So the Quwa of all the cells of the body absorb food materials and Ruh (pneuma), and metabolize and transform them into various compounds and replace the wear and tear by producing the energy for the proper functioning of the body (22-26). The above description of Quwa and its function is described in Umoore Tabi'yah (basic physiology), specially, in the context of digestion and absorption of food materials from the GIT and transportation of these toward the tissues; absorption and retention of materials by the help of different Quwa into the cells can be clearly understood.

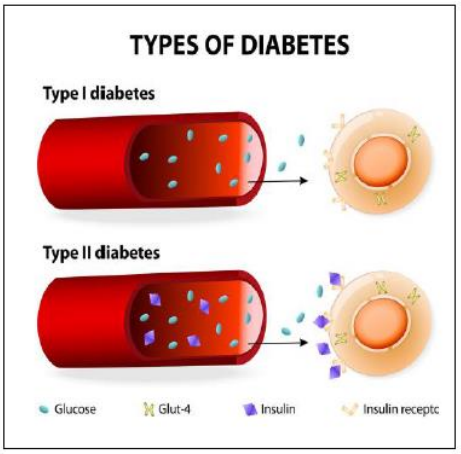

Fig. 03: Types of Diabetes Mellitus.

III. Classification of Diabetes Mellitus (Ziabetus Shakri)

A. According to the presence or absence of sugar in the urine, Ziabetus is divided into two types:

- 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.

B. According to the khiffat and shiddat (intensity) of the sign and symptom, Ziabetus is also divided into two types

- 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.
- Ziabetus Barid in which the thirst and frequency of urine are comparatively less

IV. Features of Diabetes Mellitus (Ziabetus Shakri)

According to the Unani System of Medicine, Ziabetus Shakri is due to the excess amount of Rutoobat and Buroodat in terms of quality and quantity.Normal physiological phenomenon of the body is excretion of unnecessary amount of fluid in the form of urine so the first symptom develops is polyuria which ultimately leads to polydipsia. Every organ in our body sustains on Akhlat-e- Saliha but Sue Mizaj Barid Ratab Umomi disturbs the normal physiology.[11,12] If Akhlat and nutrition are not sufficient in quantity as needed hence body will need more nutrition frequently that results in 2nd symptom of Ziabetus Shakri i.e. polyphagia. This Polyphagia alone cannot fulfill every requirement of the body but simultaneously Sue Mizaj also needs correction through the modifications in the 2nd factor of Asbab-e-sitta Zarooriya (i.e. Makool wa Mashroob.

V. Sue Mizaj Barid Ratab Umoomi and Ziabetus Shakri

Ziabetus Shakri is a complex disease similar to metabolic syndrome in conventional medicine. It increases the abnormal buroodat and rutoobat in body and develops Sue Mizaj BaridRatabUmoomi. Sue mizaj is classified in many ways such as Mumacil Sue Mizaj, Mukhalif Sue Mizaj,Mustahkam or Gair Mustahkam Sue mizaj etc. In case of Ziabetus, initially Sue Mizaj Mumacil develops in the body that means the organs which have the phlegmatic mizaj are affected first for example kidney, Aasab and Nukha. It is clear that kidney is the organ which is fully covered with fat and Polyuria is the first symptoms due to the development of sue Mizaj mumacil in it. Abnormal Buroodat and Rutoobat causes constriction and tightness in Aasab wa nukha (Nerve and Spinal cord) which leads to obstruction in the free passage of Rooh-e –Nafsani. Therefore, Aasab-e-Harkia(Motor Nerve) affect motor function and Aasab-e-Hissiya (Sensory Nerves) affect sensory functions. These two condition may occur simultaneously or one after other. Sense, action or reaction is the essential function of human body. If functions of these Aasab (Nerves) become poor then protective sensation such as cold, heat, pain and frictions is lost, these features resemble Diabetic Neuropathy. If it occurs in either of the foot or in bed ridden patients it results in peripheral ulcers and bed sores respectively. In intestine or colon, it results in constipation, colicky pain and obstruction etc. Neuropathy is not the result of diabetes only but it may be due to trauma or tumors in or around the nerves (Fig. 2).[8,10,11,14,15]

VI. Diabetic Vasculopathy

In Advanced case of Ziabetus Shakri, Mukhalif Sue Mizaj is developed which means those organs are affected which have Har Ratab Mizaj such as Urooq and this ailment also causes constriction and tightness in vascular system which leads to deficiency of Rooh-e Tabiyee and Rooh-e Haiwani to the affected organs. Resulting in less blood supply to those particular organs and these affected organs gradually loses its normal contour (anatomy as well as physiology). This loss appears as ischemia and ultimately diabetic foot and gangrene develops. It must be pointed here whenever Rooh-e-Tabiyee is disturbed, initially Quwat-e-Gaziya is affected. This Quwat-e-Gaziya consists of Quwat-e Jaziba, Masika, Hazimaand Dafiya. Quwate Gaziya acts in three different modes Tawleed, Talseeq and Tashbeeh. This indicates that any disturbance in Quwate Gaziya means all the four Quwa are already affected and further three more Quwa (Tawleed, Talseeq and Tashbeeh) will also be affected on which growth and development of the body is dependent. Dafiya of Quwat-e Gaziya wants to remove excess or unused material from the body which ultimately results in a wound (Fig. 3).[7,10]

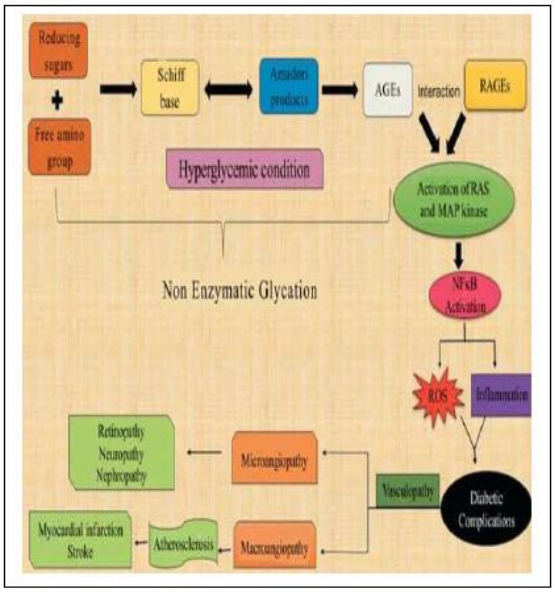

Fig. 04: Diabetic Vasculopathy.

VII. Concept of Cupping (Al- Hejamah)

Introduction Cupping is an ancient therapy practiced by several cultures for improvement of health and general well-being. The technique involves the use of either a plastic, bamboo, earthen or glass cups placed on the desired acupoints on the skin to create suction. Currently, the mechanism of effect of cupping therapy remains unclear, although proper cupping causes skin hyperemia or hemostasis that facilitates healing. In Kurdish culture, cupping therapy is known as Kalla-Shax. Cupping in Arabic name is Al- Hejamah, which means to reduce size in order to return the body to its natural state. Al-Hejamah has been part of the Middle-Eastern culture for thousands of years with records of the practice in an Egyptian medical textbook, Ebers Papyrus, dating as early as 1550 BC. The earliest records of cupping in China were in an ancient book, Bo Shu, which was discovered in an ancient tomb of the Han Dynasty. Cupping therapy is now formally and widely practiced in hospitals throughout China. Cupping therapy can be either dry or wet. Dry cupping therapy is more popular in the Far-East whereas wet cupping is favored in the Middle East and Eastern Europe regions. Cupping is either used alone or in combination with acupuncture to symptomatic treat a wide range of conditions such as pain, hypertension, stroke, cardiovascular diseases, hemophilia, inflammation, varicose veins, rheumatic arthritis, sciatica, back pain, chest pain, muscle ache, severe headache and migraine. The therapy is also recommended as a form of deep tissue massage, and for mental and physical relaxation and infertility. According to Islamic prophetic medicine, cupping therapy is best performed on the 17th, 19th, and 21st of the Islamic calendar and it is recommended that patient should not eat at least 2e4 h before cupping.

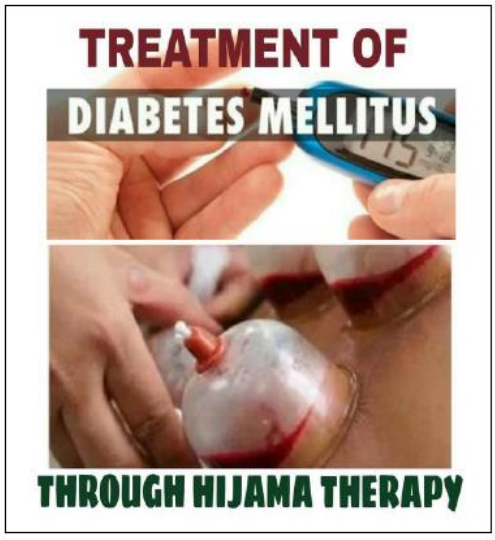

Fig. 05: Treatment of Diabetes by Cupping.

Although cupping therapy is a relatively safe form of complementary and alternative medicine, excessive cupping therapies, especially within short intervals, may cause weakness, drowsiness, and lighten head. Bruising and skin discoloration are among the adverse effects of cupping while excessive cupping may also cause, ecchymosis, bleeding, anemia, blisters, skin pigmentation, abscesses, and wound infections if performed by unqualified therapist. Although some clinicians remain skeptical about the effectiveness of cupping, growing evidence shows that the therapy has beneficial health benefits. Among the benefits of cupping are in the treatment of herpes zoster, cough, asthma, pain, high blood pressure and primary infertility in male. As well as, it might remove oxidants and heavy metals from the body, and increases sleep quality. Thus, this study investigated the effect of wet cupping therapy on pathophysiological, hematological, and serum biochemical parameters in human patients with severe headache, chest pain and muscle ache with history of metabolic diseases.

VIII. Effects of cupping on Diabetes

Diabetes is closely related to high levels of glucose in the blood. There are many effects of cupping on diabetes and indirectly affect blood glucose levels. The effects in question are that cupping plays a role in stimulating blood circulation and supplying nutrients to beta cells in the pancreas. Cupping also controls insulin production (hyper-insulinism), which occurs in people with type 1 diabetes and causes excess insulin (hyperinsulinism) as occurs in people with type 2 diabetes. Blood circulation in the pancreas and affects controlling insulin levels. The strong suction in the cupping process plays a role in removing intestinal metabolic waste substances from the portal circulation in the liver to increase metabolic processes in the liver and reduce sugar levels.

Fig. 06: Cupping an effective Regimenal Therapy for Diabetes.

The suction power in the cupping process releases various acids (hexosamines) from the muscles and tissue under the skin, thereby paving the way for insulin to attach to its receptors and increasing insulin receptors' sensitivity, thereby reducing insulin sugar levels. Cupping plays a role in stimulating blood circulation in the muscles, thereby increasing the metabolism of nutrients and increasing the consumption of glucose by the muscles. The sensitivity of insulin receptors will

increase, which will help reduce sugar levels. This is exactly like the effect of exercise and physical activity on blood sugar levels.

Although Hijama is not a cure for diabetes, it can assist by detoxing the body and blood by reducing the toxic accumulated waste in the body and improving blood circulation. Hijama also assistsin cleansing the blood and cells, resolving stagnation and blood stasis in the body. Diabetes can make it difficult to control your blood pressure and cholesterol, which can lead to heart attack and stroke and other serious conditions.

Hijama increases blood flow in the body and improves circulation; it also reduces blood pressure and cholesterol when performed regularly. It is important to maintain a healthy diet that is high in dietary fibre and nutritious food, and maintain an active lifestyle.

IX. Historical and modern cupping Iinstruments

The earliest cupping instruments were hollowed animal horns with a small hole at the top through which the therapist would suck out the air. Subsequently, various natural objects began to be used for cupping practice. For Example Natives along the west coast of North America, in the vicinity of veneer island, used shells, In Europe, Asia, Africa, and North America, animal horns were fashioned into an effective cupping instrument by slicing off the apex of a buffalo horn to make a hole. The base of the horn was then placed on a specific skin area and the air was sucked out by mouth. After creating a vacuum, the opening of the horn was closed off with a piece of wax. In the Barylon-Assyrian empire, Cupping therapy was also conducted with buffalo horns. This information was found inscribed on clay tablets, which may have dated back to nearly 700 B.C. Cupping and bleeding instruments, Such as various scalpels and cupping vessels, were found at the temple of Asclepius at Athens.

Fig. 07: Instrument used in Ancient Greek for cupping.

The use of horns slowly gave way to bamboo glass and plastic cups. Since the 17 th century, different types of cups have been used in cupping therapy around the world. Medical equipment manufacturers produce cupping sets from the middle part of the 20th century. Instruments and tools have been further developed to include new glass cups, magnetic cups, manual pumps, and electrical suction devices. Now, new cupping devices continue to be developed. Overall, this trend reflects the continuing innovative progress in Cupping procedures, their types, Instruments, and classification. Mechanism of Action The mechanism of action of cupping therapy was not clear until now, the main proposed mechanism was the effects of sub-atmospheric pressure suction, promoting peripheral blood circulation, and improving immunity. Many theories have been suggested to explain numerous effects of cupping therapy and its mechanism of action, several types of research proposed biological and mechanical processes associated with the cupping session. For instance, reduction of pain may result from changes in biomechanical "Pain-Gate-Theory (PGT), Diffuse Noxious Inhibitory Controls (DNICs) and "Reflex Zone Theory (ZRT)". Muscle relaxation, specific changes in local tissue structures, and increase in blood circulation could be explained by the "Nitric Oxide Theory". The immune-modulatory effects of cupping therapy could be attributed to the "Activation of Immune System Theory (AIST). Releasing of toxins and removal of wastes and heavy metals might be attributed to the "Blood Detoxification Theory (BDT)". These theories may have been interesting harmoniously to produce the beneficial effects of cupping in treating patients with various diseases and promoting well-being in healthy people.

Fig. 08: Cupping in Ancient Greekfor Diabetes.

A. Duration of Cupping

(A) The cups are left in place anywhere from 5–12 minutes depending on the nature of the individual's condition.

(B) A general course of treatment involves 4–6 sessions in intervals starting from 3 – 10 daysgaps.

B. Indications of Cupping

- Pain
- Stiffness
- Muscular Spasm
- Congestion due to trauma
- Skin disorder
- Digestive complaints
- Lung disorders

Diseases that come under cupping therapy are Lumber Disc herniation, Cervical Spondylitis, Cough, Bronchial Congestion, Asthma, Anxiety, Paralysis, Depression, Back Pain, Varicose Vein, High blood pressure, Eczema, Acne, Fertility, Arthritis, Fibromyalgia, Diabetes, Anemia, Shingles(Herpes Zoster), Insomnia, and Gout.

C. Contraindications of Cupping

- For patients with bleeding disorders such as hemophilia, or who are being treated with anticoagulants, Cupping may not be the best treatment option.
- Cupping should not be performed on skin sites with active inflammation, Burns, Infection, and Open wounds.
- Childhood
- Elderly
- Pregnant
- Menstruation[75]

Fig. 09: Modern Cupping for Diabetes.

D. Adverse Events

Cupping therapy adverse events can be divided into local and systemic adverse events[70]

- Local Adverse Events
- Bruises (Hematoma)
- Marks on the skin
- Minor to severe burn
- Panniculitis
- Abscess formation
- Irritation (After treatment) □
- Pain at the incision site (After treatment) □
- Infection at the incision site (After treatment)

CONCLUSION

In spite of tremendous advancement in medical science, we are still in the dark as we were few decades ago regarding preventive and curative aspects of diabetes. Lots of epidemiological work have been carried out and so many risk and related factors have come to our knowledge, but we are unable to get effective treatment. We will have to think about and follow alternative therapies. The holistic Unani concept of medicine is a ray of hope for the suffering. In Ziabetus, the maximum damage is prone to vessels and vascular organs. So the Unani insight of correcting organs may be effective managing strategy, Correction of Sue Mizaj (in temperament) and ultimately faculties may be best preventive and curative steps to halt the progress of disease because in the Unani prospect, iabetes is nothing but a disturbance of vascular and organic digestion

In spite of the advanced age of medical science we are still lagging behind to get an appropriate management of Ziabetus Shakri. Therefore, researchers are looking for an alternative approach to tackle and manage the Ziabetus Shakri. According to USM main cause of the Ziabetus Shakri is Sue Mizaj Barid Ratab. Therefore, it becomes easy to prevent Ziabetus according to Unani System of Medicine. Correction of Asbab-e-Sitta Zarooriya and Ghair Zarooriya are the only way to stop and prevent Ziabetus Shakri and its complications, for example living in little bit hot environment, avoidance of excess barid foods, excess harkat or sukoon, excess or less meals means USM wants equinox inevery part of life.

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