

JUVENILE DIABETES: BETTER TO PREVENT THAN CURE

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Article Received on
26 Jan. 2017,

Revised on 16 Feb. 2017,
Accepted on 09 March 2017

DOI: 10.20959/wjpr20174-8169

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ABSTRACT

Type 1 diabetes is one of the most common endocrine and metabolic conditions among children. According to the latest edition of the diabetes Atlas, an estimated 490,100 children below the age of 15 years are living with type 1 diabetes. India being home to an estimated 97,700 children with T1DM and there is evidence that the occurrence is mounting hastily. The cause of type 1 diabetes is not known and it is not preventable with current knowledge. Here Ayurveda has an opportunity to discover the guidelines for prevention of juvenile diabetes and to ignore its complications. According to Ayurvedic pathophysiology it may be a result of *Beeja Dosha* (genetic factor), *Ahara Dosha* (depraved diet) and *Agni Dushti* (digestive fire

disturbance). Creating awareness among general public regarding the importance of *Atulyagotriya Vivah* (non-consanguineous marriages), *Garbhiniparicharya* [regimen for pregnant women], *Shad Garbh Bhavas* (pro-creative factors) and avoidance of *Garbhopaghatakar Bhavas* (detrimental factors affecting foetus) can help in reducing the incidence of juvenile diabetes directly by altering *Beeja Dosha*. Specific herbal drugs, Yoga and balanced diet can improve the life of a diabetic patient.

KEYWORDS: Beeja Dosha, Garbhini Paricharya, Herbal drugs, Diet and Yoga.

INTRODUCTION

In 2008, an estimated 347 million people in the world had diabetes and the prevalence is growing, particularly in low- and middle-income countries. India had 69.2 million people living with diabetes (8.7%) as per the 2015 data. Of these, it remained undiagnosed in more than 36 million people. WHO estimated that India have 79.9 million diabetics by 2030. A quarter of the income is devoted to diabetic care for a low income Indian family that WHO said. Every fifth adult of the is an Indian, for which India is consider as a diabetic capital by international diabetic federation.^[1] Delhi 21 lacks cases in which 5300 children by national urban diabetic survey, 2005.^[2]

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin, a hormone that regulates blood sugar, gives us the energy that we need to live. If it cannot get into the cells to be burned as energy, sugar builds up to harmful levels in the blood. Type 1 diabetes, formerly called juvenile diabetes, is usually diagnosed in children, teenagers and young adults. Type 1 diabetes may develop in adults. This is an autoimmune disease causing specific destruction of Beta- cell of pancreas which result in an absolute insulinopaenia. The diabetes syndrome since birth due to a genetic defect is said to be incurable. All stage of the diabetes syndrome, if not treated properly lead to severe complication like CRF (Nephropathy), Retinopathy and multiple organ failure are incurable in due course of time and then become incurable. Genetic involvement in diabetes are-

Type-1 Diabetes mellitus: indicates the process of beta – cell destruction that may ultimately lead to absolute insulin deficiency.

Auto immune diabetes mellitus: This form of disease encompassed by the terms insulin-dependent diabetes, type 1 diabetes or juvenile onset diabetes, results from auto immune destruction of the beta cells of the pancreas.

Idiopathic: There are some forms of Type 1 diabetes which have no known etiology. Some of these patients have permanent insulinopenia and are prone to ketoacidosis, but have no evidence of autoimmunity.

Genetic defects in β -cell function: Genetic factors account for about one-third of the susceptibility to Type-2 diabetes. Over 20 different regions of the human genome show some

linkage with Type-1 diabetes, but more interest has been focused on the Human Leucocyte Antigen (HLA) region within the major histocompatibility complex on the short arm of chromosome 6.

Ayurveda described about genetic concept while classifying the diseases in various seven groups. It has been nomenclature as *Adibala Pravritta* or *Sahaja Vyadhi*.^[3] There are references available in respect to *Prameha* as *Kulaja Vikara*.^[4] *Beeja* (chromosome), *Beejabhaga*(genes) and *Beejabhagavayava*(fraction of part of chromosome) were described while explaining the morbidity of sperm and ovum.^[5] Ayurveda also says that hereditary diseases are incurable. To name a few diseases like *Prameha*, *Arsha*, *Kushtha* etc manifest due to morbidity in sperm and ovum.^[6]

Prameha is classified etiologically in to *Sahaja* (Hereditary) and *Apathya Nimittaja*^[7] (Unwholesome things – food and exercise etc.).

- **Genetic (Sahaja)**, occurring in young age from the very beginning of life that has some similarities with the juvenile diabetes or insulin-dependent diabetes; *Sahaja* type of *Madhumeha* is due to certain defects in *Stri* and *Pumbeeja* (ovum and sperm) which is said to be *Matrupitru beejadoshakrita* (Chromosomal defect from parents) will result in *Sahajaprameha*.^[7]

- **Acquired (Apathyaja)** due to an unhealthy lifestyle that occurs in old age and obese people and has similarities with type 2 DM. Type 2 DM has even greater involvement of genetic factors than type 1 DM, but no specific gene has been linked to DM to account for the role.

According to classic Ayurvedic texts, DM and all *Pramehas* (urinary disorders) start with the derangement of *Kapha* that spreads throughout the body and mixes with fat (*Meda*) that is similar in physical properties to *Kapha* (mucus). *Kapha* mixed with fat passes into the urinary system, thereby interfering with normal urine excretion.^[8] Vitiated *Pitta*, *Vata* and other body fluids (*Malas*) may also be involved in this blockade. This blockade is believed to be the cause of frequent urination observed in DM. *Pramehas* left untreated may lead to deranged development of the bone marrow, body tissues, nutritional materials (fat, proteins, and carbohydrates) and hormones (*Ojas*). The incurable stage of *Pramehas* is *Madhumeha*^[9], which is insulin-dependent DM. *Madhumeha* may not be described precisely in Ayurveda, but it points in the direction of the current knowledge we have about the disease with respect to neurological damage and insulin malfunctioning at the production (degeneration of islets

of Langerhans in the pancreas) or at the utilization levels. The involvement of tissues (*Dushyas*) leading to blood vessels, kidney, eye and nerve damage is also described in Ayurveda as major complications. DM is described not only as a condition of *Madhumeha* (sugar loss in urine), but also as a condition of *Ojameha* (immunity and hormone loss) in Ayurveda for the purpose of treatment.

When we talk about Ayurvedic management of *Madhumeha*, it starts from before conception and goes through antenatal period to diseased stage. There are some factors that affect the development of fetus and its health. So considering them all these factors should be managed to prevent juvenile diabetes. These factors are:-

Before conception: In Ayurveda we have a concept that the *Prakruti* of a child depends on the *Doshas* which is prominent at the time of conjugation of sperm and ovum. These *Doshas* are affected by multiple factors like quality of sperm and ovum, environment etc. In those families which have a history of JD should be advised to ignore *Kaphaj Ahara* and *Vihara* from their lifestyle before planning a child so that we decrease the probability of another diabetic child. We can also use Medicines for *Shukra Shodhan*(*Vajikarak*) and *Artava Shodhan* and proper environment for ideal type of conception given in Ayurvedic text.

Atulyagotriya Vivah^[10]: Preconception counseling can play a vital role not only in achieving the goal of a healthy progeny, but also in preventing congenital and genetic disorders.

Garbhkar bhavas: For meeting the objective of a healthy progeny, *Ayurveda* scholars felt the importance of Six Procreative Factors (*Shadgarbhakarabhavas*) such as *Matrija* (maternal), *Pitrija*(paternal), *Atmaja* (Soul), *Rasaja* (Nutritional), *Satmyaja* (Wholesomeness) and *Sattvaja* (Psych / Mind). The conglomeration of these procreative factors is a must for healthy progeny.^[11] Healthy mother, father (good code of conduct), practice of a wholesome regimen, and a healthy mind (Psychological status of parents) play a prime role in achieving a healthy offspring, thus structuring a healthy family, society and nation.

Each procreative factor is assigned with a certain organogenesis / functional / psychological phenomenon, to develop in the forthcoming baby, during its intrauterine life. A lag on the part of any of these procreative factors will lead to physical, functional or psychological defects, which can be contributed by the respective factor.

The above-mentioned *Matrija*, *Pitrija*, and *Aatmaja Bhavas* cannot be changed as they come from the parents and *Poorvajanma Samskaras* (as a result of the code of conduct), respectively, but the other three *Bhavas-factors*, namely, *Satmyaja*, *Rasaja* and *Sattvaja Bhavas*, practiced properly can modify the intrauterine environment and psychosomatic health of the mother, producing a healthy impact on the fetus. It is a known fact now that environmental factors can influence the genome.

Garbhakara Bhavas are not only the factors that bring the similar new one into this universe, but they are the carriers of the organogenesis and other traits to the fetus. “Pregnancy should be by choice not by chance”; preconception counseling can play a vital role not only in achieving the goal of a healthy progeny, but also in preventing congenital and genetic disorders. The area or race prone to particular congenital / genetic defects will prove this hypothesis, if the defective child birth rate is even reduced to a certain extent, by following the possible wholesome and righteous concepts of the six procreative factors.

Garbhopaghathakara Bhavas: (Activities and substances which are harmful to fetus): *Garbhopaghatha Kara Bhavas* are the *Ahara* and *Vihara* which are harmful to the *Garbha* (fetus). These may cause some congenital defects in the child and are not conducive to the birth of a healthy child, with all the good qualities.^[12] These can be grouped under two different headings namely *Ahara* (diet) and *Vihara* (behavior).

Garbhini Paricharya: *Garbhini Paricharya* is very well documented in Ayurvedic classics starting from *Samhita* period. Ancient Ayurvedic scholars knew the importance of women health for a hale and hearty progeny. In this regard scholars have prescribed monthly dietary regimen and life style practices for whole pregnancy according to the need of mother’s health and fetal development and well-being.^[12] Antenatal care, right from the preconception to full-term delivery will certainly play a key role in the prevention of such congenital and genetic disorders. According to *Garbhini Paricharya* we can also manage *Kapha dosha* (Over-nutrition) to its normal range and Juvenile diabetes.

Type of Diet Name^[14]

Cereals - Purana shali (old rice), Shastic Shali (rice which crops within 60 days), *Yava* (Barley) (*Hordeum vulgare*), *Godhum* (wheat), *Kodrava* (grain variety – *Paspalum scrobiculatum*).

Pulses - Adhaki (red gram-*Cajanus cajan*), Kulattha (horse gram) and Mudga (green gram) should be taken with bitter and astringent leafy vegetables.

Vegetables - Navapatola (young *Tricosanthus dioica*), young vegetables variety of banana, Tanduleyaka (*Amaranthus spinosus*), Vastukam (Bathuva), Matsyakhshi (*Alternanthera sessilis*) all bitter vegetables (tiktasakam) like Methica (Fenugreek leaves), Karavellaka (Bitter gourd).

Fruits - Orange, watermelon, apple and guava, Jambhū (*Syzigium cumini*) Kapitha (*Feronia limonia*), Amalki (*Phyllanthus embilica*) etc fruits.

Flesh - Harina (deer), birds like Kapota (pigeon), Titira (Grey Francolin).

Oils - Nikumba (*Danti-Baliospernum montanum*).

CONCLUSION

It may be a result of *Beeja Dosha* (genetic factor), *Ahara Dosha* (Depraved diet), *Agni Dushti* (digestive fire disturbance). Genetic disorders & there pathology is similar to that of *Beej* theory of Ayurveda. The management of *Beejdushti* may be applicable in genetic disorder. In those families which have a history of JD should be advised to ignore *Kaphaj Ahara* and *Vihara* from their lifestyle before planning a child so that we decrease the probability of an another diabetic child. We can also use Medicines for *Shukra* and *Artava Shodhan* and proper environment for ideal type of conception given in Ayurvedic text. Follow up of *Garbhiniparicharya* and methods like non-consanguineous marriages can help in reducing the incidence of juvenile diabetes directly by altering *Beeja Dosha*. Specific herbal drugs, diet and lifestyle management can improve the life of a diabetic child. “Early diagnosis-early intervention” – Golden rule of the successful management protocol of Juvenile diabetes.

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