

A REVIEW ON REPRODUCTIVE HEALTH CHALLENGES IN DIABETIC WOMEN AND ITS MANAGEMENT THROUGH AYURVEDA

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ABSTRACT

The reproductive journey for woman is complex. For women with diabetes this journey can be more difficult as diabetes poses challenges throughout life, particularly in relation to sexual and reproductive health. Conditions found in diabetic woman are delayed menarche, menstrual irregularities, infertility, polycystic ovarian syndrome, sexual dysfunction, pregnancy complications, urinary problems, vaginal infections, menopausal symptoms. Thus, complete knowledge of effects of diabetes on female reproductive health helps in prevention and early recognition of disorders.

Keywords: Diabetic Women, Ayurveda, Reproductive health problems

INTRODUCTION

Diabetes is a disease that affects millions of people and their families. The WHO estimates that more than 180 million people worldwide have diabetes. This number is likely to more than double by 2030¹. The reproductive journey for woman is complex and generally starts when a woman becomes fertile at menarche and ends with loss of fertility at the menopause. For women with diabetes this journey can be difficult by reproductive abnormalities at every stage. Diabetes poses challenges throughout life, particularly in rela-

tion to sexual and reproductive health. Early diagnosis and treatment of these problems can help ensuring healthy living to the diabetic woman. Well-planned pre-conception care is also another prospect which protect maternal and infant health also. As Ayurveda is recognized as the foremost life science and describes various modalities to prevent and manage lifestyle disorders such as diabetes mellitus, the world is being attracted towards its potential.

Aim and Objective:

- To know effects of diabetes on reproductive health of women
- To prevent other gynecological and obstetrical pathologies in diabetic women
- To rule out diabetes as cause of various gynecological ailments
- To manage complications of impaired glucose metabolism

Materials and Methods: Ayurveda classics, commentaries, modern literature, other recently published books and research journals were studied and then an effort was made to assess effects of diabetes on female reproductive health and their management through Ayurveda.

Result: Complete knowledge of effects of diabetes on female reproductive health helps in prevention and early recognition of disorders. This is the first step to make use of Ayurveda in maintaining health as aim of Ayurveda. There are following conditions which may be found in a diabetic woman:

Delayed Menarche²:

Diagnosis of type 1 diabetes in childhood can affect many aspects of growth and development of girls, including sexual development. One element related to sexual development and growth is menarche. If the onset of diabetes is before puberty and there is poor glucose control, menarche may be delayed as a result of factors such as hypogonadism and abnormal ovarian function. Delayed menstruation is also associated with decreased bone mineral density

Menstrual irregularities³:

Women with type 1 diabetes are at higher risk than those without diabetes of experiencing menstrual irregularities, such as amenorrhea,

polymenorrhagia and oligomenorrhea, throughout their fertile years⁴. This is the result of chronic abnormal metabolism associated with diabetes. Alterations in blood glucose levels during the menstrual cycle have been reported in women with type 1 diabetes also. Consequently, they need to monitor blood glucose closely and make adjustments to their insulin doses and diet where necessary.

Infertility⁵:

There is a relationship between obesity and type 2 diabetes and a close association between obesity and reduced ovarian function. It has been proposed that women with type 2 diabetes who are obese, are more likely to experience infertility as a result of ovulation failure than women who have a normal body mass index

Polycystic ovarian syndrome⁶:

Polycystic ovarian syndrome is an endocrine disease which is associated with type 2 diabetes and impaired glucose tolerance. Insensitivity to insulin and consequently high levels of insulin (hyperinsulinemia) affect many women with the syndrome.

Sexual dysfunction⁷:

Sexual dysfunction is a complex phenomenon involving biological, psychological, social and cultural aspects. Fatigue has been cited by women with type 2 diabetes as a major contributor to their lack of libido. Other risk factors for sexual dysfunction in women with type 1 and type 2 diabetes are the duration of diabetes, vascular complications and menopause.

Gestational diabetes mellitus:

Diabetes is the most common medical problem to complicate pregnancy. Gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recogni-

tion during pregnancy because of the diabetogenic effect of pregnancy and will have normal carbohydrate tolerance after delivery, it is a rising problem worldwide. Complications include maternal, fetal and neonatal complications such as miscarriage, maternal hypertension, operative birth, birth trauma and neonatal hypoglycaemia⁸. The need for pre-pregnancy care is evident to ensure good glycaemic control, which improve maternal and fetal outcomes. Numerous strategies have been employed to encourage women with diabetes to seek and follow pre-conceptual advice and care

Urinary problems:

Women with diabetes have increased risk of urinary incontinence compared to women without diabetes. The type and duration of diabetes, poor blood glucose control, peripheral neuropathy are important risk factors for urinary incontinence. Women with high blood glucose levels and urinary bladder dysfunction require close attention and careful management to prevent urinary infections.

Vaginal Infections:

Asymptomatic and fungal (candida) infections are frequent in women with diabetes. Vaginal thrush is a common problem. High glucose environment provides favorable habitat for fungal organism to grow.

Menopause⁹:

Some symptoms of menopause could be confused with signs of hypoglycaemia and hyperglycaemia such as dizziness, sweating and irritability. Metabolic changes that occur with menopause may contribute to the diabetes, including increased central body fat, insulin resistance and low-density lipoprotein cholesterol, and decreased high-density lipoprotein cholesterol levels¹⁰. These changes in body com-

position have, in turn, been associated with alterations in insulin sensitivity and glucose metabolism, rendering women with type 2 diabetes at increased risk of cardiovascular disease¹¹.

DISCUSSION

Conventional Treatment of Diabetes: *Yogevam Ekal Dravya* (Formulations and Single Herbs).

*Choorna: Triphla*¹²

*Kwath: PhaltrikadiKwath*¹³, *Khadir-KramukKwath*¹⁴, *LekhaniyaMahakashaya* (In Obese)

*Arishta: Devdarvyadyarishta*¹⁵

*Vati: ArogyavardhiniVati*³⁹, *ChandrprabhaVati*¹⁶

*NaimitikRasayana: ShilajatuRasayana*¹⁷,

*SwarnamakshikaRasayana*¹⁸

*EkalDravya: Vijaysar Saar*¹⁹, *AgnimanthTwaKEvamPatra*, *Karela*²⁰, *Jambu*³⁶, *AmraPhalMajja*²¹, *Gudmar*³⁷, *Amalaki*²², *Haritaki*²³, *Haridra*²⁴, *Guduchi*²⁵, *Kutaki*²⁶, *Chirayata*²⁷

*RasAushadi: RasSindoor*³⁸, *AbhrakBhasma*³⁸, *VangBhasma*²⁸, *SwarnaMakshika*, *HarishankarRas*²⁹, *BasantkusumakarRas*³⁰

Gynecological aspect:

In *Yogaratnakara*, it is mentioned that *Prameha* is not found in woman who have regular menstrual cycle. *Madumeha* is one type explained under the umbrella of *Prameha*³¹. This hints towards the correlation between *Madumeha* (diabetes mellitus) and menstrual cycle in Ayurveda perspective also. In view of this statement, it is postulated that treatment of *Madumeha* should be done firstly to achieve normal menstrual cycle. It was found that better glycemic control and prevention of diabetic complications improves these irregularities

and increases fertility rates. Diabetes mellitus Type 1 and Type 2 should be considered in the differential diagnosis of menstrual abnormalities and infertility. The reproductive period of diabetic women may be reduced due to delayed menarche and premature menopause.

After ruling out other possible causative factors, following treatment should be followed in particular condition in diabetic women:

Delayed Menarche: Anti Diabetic Regime: *Chandraprabhavati, DevdarvyadiKwatha, PhaltrikadiKwath, Swarnamakshikkalparasayana*

Menstrual Irregularities: *Swarnamakshikkalparasayana*

Infertility: Conventional infertility treatment + *PhaltrikadiKwatha, Chandraprabhavati, Devdarvyadyaristha, ShilajeetRasayana.*

PCOS: Conventional treatment+*Arogyavardhinivati, Khadir-KramukKwatha, Shilajeetrasayana,*

Loss of libido: Women need to be given information about the physical effects of diabetes on sexual wellbeing and sexuality and should have the opportunity to discuss these issues in a safe and confidential environment, *MedhaVati, BrahmiVati, Cap. Vivadona* (By Charak Pharma, main ingredients: *Brahmi* (Bacopa monnieri), *Safed musli* (Chlorophytumarundinaceum), *Kali musli* (Curculigoorchoides) and *Shatavari* (Asparagus racemosus))+ **Conventional Anti Diabetic Treatment.**

Urinary Incontinence:Antidiabetic management + *Khadir-KramukKwatha, TribangBhasma, TarkeshwarRas, Chandra Kala Ras, Tab Neo* (By Charak Pharma, Main ingredients: *Kapikachchhu* (Mucunapruriens), *Bhringaraj* (Eclipta alba), *Shatavari* (Asparagus racemosus) and *Yastimadhu* (Glycyrrhiza glabra)).

Vaginal Infection: Antidiabetic Therapy+local application of *JatyadiTaila, Prabha-karTaila, PanchvalkalKashayaPrakshalan,*
Menopause: Conventional Treatment for postmenopausal symptoms + *Paripathadi Kwatha, BhunimbadiKwatha*

Contraceptive methods³²: An effective method of contraception is recommended. A woman's individual diabetic profile and her need for effective contraception are paramount. For older women with diabetes, microvascular and macrovascular complications such as retinopathy, neuropathy, nephropathy and cardiovascular disease need to be taken into account. It has been suggested that these women should not use hormonal methods of contraception³³.

For younger women without complications, it is suggested that the low-dose estrogen and progesterone combined pill can be used with careful metabolic monitoring, as the importance of effective contraception outweighs the risks of an unplanned pregnancy³⁴.

For younger women with type 1 diabetes, combined oral contraceptives may be the most appropriate form of contraception. Women who have completed their family may consider a non-reversible form of contraception such as tubal ligation or vasectomy.

Intrauterine contraceptive devices and intrauterine contraceptive systems may be suitable alternative contraceptive methods for women with diabetes. The copper intrauterine contraceptive device is a useful choice in women with diabetes who have vascular disease, proliferative retinopathy and nephropathy. It has no contraindications or metabolic side effects and excellent efficacy rates

Obstetric Aspect:

Gestational DM: Pre-conception counselling and education to all women with diabetes should be given in child-bearing period. Pre-conception care in women with diabetes is essential to reduce complications and improve the outcome of subsequent pregnancies. Optimized pre-conception care is based on a comprehensive assessment of a woman's entire medical history together with a physical examination, and an evaluation of risk factors, family history, medications, and dietary and exercise habits. Special assessment of diabetes in pre-conception care should also focus on metabolic control and HbA_{1c}, vascular and lipid status, renal function, and should include an electrocardiogram, a fundoscopic examination and thyroid function tests³⁵.

GDM imposes several complications for affected women and their babies making it crucial for effective strategies for prevention. Both non-pharmacological and pharmacological approaches to the prevention of gestational diabetes have been, and continue to be explored. So, finding simple and cost-effective ways to prevent women developing gestational diabetes is important. In the prevention of Gestational diabetes, *Swasthavritta* (life style modification) plays a very important role.

Various regimens like *Dincharya* (daily regimen), *Ritucharya* (seasonal regimen), *Rasayana* therapy (rejuvenation), *Sadvritta* (rules & regulations of ideal routine) and *Achara Rasayana* (code of conduct) along with Yogic practices are utmost important factors to maintain a healthy lifestyle and happy psychological set up. The inclusive utilization of all these modalities has a great effect in the prevention of Gestational diabetes. Continuous use of *Ha-*

ridra+Amalaki or *AmalakiRasayana* in pregnancy has preventive and therapeutic effect.

CONCLUSION

Diabetes being one of the greatest challenge for human health imposes big impact on female reproductive health too. Diabetic woman faces problems related to reproductive system in addition to other complications of high sugar concentration. It should be borne in mind that in diabetic women blood glucose level must be considered while treating other disease also as it may be effect of poor glycemic control. Thus, knowledge of diabetic complications regarding reproductive health of women is very important for treating gynecological and obstetrics complaints.

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