

## A CRITICAL ANALYSIS ON STREENAM PRAMEHA NA BHAVANTI

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### ABSTRACT

*Prameha* correlates with diabetes mellitus. The statistical data of modern medical science reveal that the incidence of diabetes mellitus in male to female ratio is low. While some authors of Ayurveda opine that *prameha* does not occur in women, because there is link between incidence of *prameha* and menstrual flow. Women get *shodhana* effect from menstrual bleeding in regular intervals. Is this theory based on scientific study, the question raised by many? This paves the way for further discussion; hence an attempt has been made to justify the statement of Ayurveda.

**Keywords:** Prameha, Diabetes mellitus, Amenorrhoea, Hyperglycemia

### INTRODUCTION

*Prameha* does not occur in women, says Sushruta. That means the incidence is only in men (*purusham janeeyat pramehi bhavishyati iti* Su.Ni 6/3)<sup>1</sup>. The reason quoted for nonoccurrence of *prameha* in women is monthly menstrual bleeding, which is regularly flushed out from the body. The concept is that the *doshas* which are responsible for causing *prameha* are carried away from the body in regular intervals (*Rajah pravartate yasman masi masi vishodhayet| sarvan dhatooscha doshashca na pramehanthyataha striyah* - Yogaratnakara chapter *prameha* Shloka 30)<sup>2</sup>. The body gets *shodhana* effect every month and because of this reason the occurrence of *prameha* is prevented in women (*na pramehanthyataha striyah*). It conveys the meaning that the cessation of menstrual bleeding causes *prameha*. If the menstrual cycle is the main reason, the occurrence of *prameha* after menopause is not ruled out. Many women suffer from diabetes mellitus during pregnancy, it is called gestational diabetes. Amenorrhoea being one of the features of pregnancy, after delivery the blood glucose may back to normal. It can also be interpreted that if the women is suffering from *prameha*, there are possibilities of incidences of

oligomenorrhoea or amenorrhoea. This shows the link between amenorrhoea and diabetes mellitus.

But this theory is not accepted by *Dalhana* and his contemporaries, because it is far from practical approach (*pratyakshya virodhat* - *Dalhana* Su.Ni 6/3)<sup>3</sup>. Hence it is not the right approach to the subject (*etattu na yuktam*). The incidence of *prameha* / diabetes mellitus in male to female ratio may be low but *prameha* do occur in women (*kinthu streeshu prameha darshanat* - *Madhukosha* Ma.Ni33)<sup>4</sup>. As discussed in *prameha hetu* the foods which are rich in promoting *kapha dosha* and *medodhatu* have similar effect on the body of men as well as women, hence women are not spared. If the cleansing (*shodhana*) of the body by menstruation is the main reason behind nonoccurrence of *prameha* (*masi masi vishudhyati*), why do women suffer from any diseases, especially pertaining to reproductive system, was the question raised by commentators? (*etatt hetu baladanya rogasambhavatwachha prayo vadamishrityoktam* - *Madhukosha*<sup>5</sup>) However, this topic paves the way for discussion.

When this topic is viewed from the angle of modern medical science, it supports the theory of Sushruta and reveals that the causes and findings of oligomenorrhoea on clini-

cal investigations are similar to those of amenorrhoea. Amenorrhoea is often the continuum of oligomenorrhoea<sup>6</sup>. The secondary amenorrhoea is defined as amenorrhoea of 6 months or more in a woman with previous normal menstrual patterns in the absence of pregnancy and lactation. The disturbance of the hypothalamic – pituitary – ovarian – uterine axis accounts for majority of cases of pathological amenorrhoea. Menstruation is the end point in the cascade of events starting in the cerebral cortex and hypothalamus and through pituitary gland and ovaries ending with uterine bleeding with patent lower genital tract. Any disturbance in this cascade of events can cause amenorrhoea<sup>7</sup>. **And diabetes is one of the etiologies of secondary amenorrhoea.**

The factors which are responsible for disturbing the regular menstrual cycle also have the effect on other systems of the body. The concept of *rajah prasekat nareenam* means onset of menstruation. There are many hormones such as estrogen, progesterone, follicle stimulating hormone (FSH), leutinising hormone (LH), gonadotropines secreted by anterior pituitary regulate menstrual cycle of women. The imbalance in these hormones has the effect on flow of bleeding during menstruation. The statistical data reveals the coexistence of hyperglycemia with amenorrhoea. There are some disorders where amenorrhoea is associated with hyperglycemia.

- The diabetes mellitus is associated with other endocrine disorders. Diabetes is very common in some endocrine disorders like hyperthyroidism, gigantism acromegaly, and Cushing syndrome and amenorrhoea coexists. The hyperglycemia in these conditions causes excessive stimulation of beta cells of islets of Langerhans. The constant and excessive stimulation, in turn causes degeneration of beta cells. This leads to permanent diabetes mellitus.
- Amenorrhoea is also coexisted with hyperglycemia in cases of PCOD, autoimmune hypothyroidism, insulin resistance, and obesity. Excess of weight is also responsible for amenorrhoea as well as diabetes mellitus, obesity in particular strongly associated with insulin resistance hence type 2 diabetes mellitus occurs.
- Autonomic neuropathy caused due to diabetes mellitus has its effect on reproductive system too. Repeated abortions and amenorrhoea in women and impotence in men may occur due to involvement of autonomic nervous system.
- Thus, diabetes is one of the etiologies of secondary amenorrhoea<sup>8</sup>.

The above said observations establish the link between amenorrhoea and diabetes mellitus (hyperglycemia). In above said disorders hyperglycemia and amenorrhoea are the common features. Because of this reason women are spared from prameha says Sushruta (*sreenam prameha na bhavanteeti*). His thoughts are loaded with meaning.

1. **Hyperthyroidism** – It is the condition resulting from the effect of excessive amount of thyroid hormone on body tissues. It is a state of excess thyroid gland function; males are affected 5 times less frequently than females. 90% of the patients of hyperthyroidism is due to Graves' disease, which is an autoimmune disease.

Clinical features – Intolerance to heat, increased sweating, mild to extreme weight loss, varying degree of diarrhea, muscle weakness, nervousness, and tremor of hands.

**Women may have amenorrhoea or oligomenorrhoea and men may have impotence or loss of libido.** Hyperthyroidism is associated with the **symptoms of diabetes mellitus, hyperglycemia, and glycoseuria**<sup>9</sup>. The ocular symptoms such as lid retraction, excessive lacrimation, chemosis, corneal ulceration, ophthalmoplegia, diplopia, loss of visual acuity are also observed. The ocular symptoms mentioned above correlate with netra upadeha explained in prameha. It is very important to note that amenorrhoea coexists with diabetes mellitus in hyperthyroidism.

2. **Gigantism** – The excessive growth of the body is called gigantism. This occurs due to hyper secretion of growth hormone in childhood or in the pre-adult life before fusion of epiphysis of bone with shaft. The hyper secretion of growth hormone may be because of tumor of acidophil cells in the anterior pituitary.

Clinical features – The subject look like the giants with average height of about 7-8 feet. The limbs are disproportionately long. The patients develop hyperglycemia and glycoseuria. The hyperglycemia causes constant stimulation of beta cells of islets of Langerhans in the pancreas for release of insulin. The over activity of beta cells of Langerhans in pancreas leads to degeneration of these cells and deficiency of insulin and ultimately diabetes mellitus is developed.

3. **Acromegaly** This is caused due to excess secretion of growth hormone (GH) from pituitary tumour or pituitary hyperplasia. It is a chronic disease of middle age, characterised by organomegaly, hypertrophy of tissues and altered metabolism in response to prolonged and excessive secretion of growth hormone.

In addition to classical clinical features, coarse and greasy skin, hypertrichosis, hirsutism, weight gain, increased sweating, **amenorrhoea in females** and decreased libido in males are observed in acromegaly. There will be symptoms of **diabetes mellitus with hyperglycemia or impaired glucose tolerance**, because the growth hormone counteracts the action of insulin<sup>12</sup>.

- Hypertrichosis means excessive growth of hair on the body with generalized distribution of coarse hairs and is not restricted to male pattern.
  - Hirsutism means abnormal growth of hair, especially in woman in a pattern that of normal male. Presence of excessive body and facial hair in women (facial hair appears over upper lip, chin, breast and thigh). This occurs due to hyper androgen in the blood.
4. **Cushing syndrome** – The adrenal cortex produces cortisol, mineralocorticoides and adrenal androgens. Excess cortisol is associated with Cushing's syndrome. It is a clinical disorder that results from inappropriately elevated levels of corticosteroids in the circulating blood. This may be associated with excess aldosterone (aldosteronism) and excess adrenal androgens (adrenal virilism). These syndromes do not always occur in the "pure" form but may have overlapping features.

Cushing syndrome is characterised by truncal obesity, hypertension, fatigability and weakness, **amenorrhoea, hirsutism. Hyperglycemia and glycosuria** develop because cortisol antagonises the action of insulin<sup>11</sup>.

There is increased hepatic gluconeogenesis and insulin resistance. This can cause impaired glucose tolerance or overt diabetes mellitus in many patients.

In women **oligomenorrhoea or amenorrhoea** may occur due to excess adrenal androgens. It is very important to note that diabetes mellitus coexisted with amenorrhoea.

5. **Polycystic ovarian syndrome (PCOS)** – PCOS is a heterogeneous, multisystem endocrinopathy in woman of reproductive age. The cause of PCOS is "insulin resistance", which is established as the central key point in the genesis of PCOS. In response to insulin resistance there is compensatory increased secretion of insulin (hyperinsulinemia), this initiates PCOS in 50 to 70% of cases. Hypothalamic – pituitary – ovarian – axis and adrenal glands are also involved to some extent.

Insulin induces LH to cause thecal hyperplasia and secrete androgens, testosterone, epiandrostenedina. Epiandrostenedina is converted in the peripheral fat to

oestrone. This leads to rise in oestrogen and inhibin level. These in turn cause high LH surge. Whereas oestrone levels increases, oestrodial level remains normal with the result, oestrone / oestrodial ratio rises.

Hyperandrogenism lowers the level of hepatic sex hormone binding globulin (SHBG), so the level of free testosterone raises leading to hirsutism (facial hair appears over upper lip, chin, breast, and thigh).

PCOS may set in early adolescent life, but clinically manifest in reproductive age with **long-term implications of diabetes mellitus**, hypertension, hyperlipidaemia, cardiovascular disease, this cluster of disorders is known as "X syndrome". The clinical features of PCOS develop early with **oligomenorrhoea or amenorrhoea**<sup>10</sup>.

#### 6. **Auto immune hypothyroidism**

Auto immune hypothyroidism may be associated with goitre. Auto immune process gradually reduces thyroid function. The clinical features of auto immune thyroid hormone deficiency include dry skin, decreased sweating, hair is dry, brittle, and difficult to manage, and falls easily, weight gain (despite of poor appetite).

In addition to classical clinical features there may be **oligomenorrhoea or amenorrhoea** in females in long standing disease. Libido is decreased in both the sexes. These features are caused due to deficiency of thyroid hormone. However autoimmune hypothyroidism may be associated with signs and symptoms of autoimmune diseases, particularly type - **1 diabetes mellitus**, vitiligo, Addison's disease etc<sup>13</sup>.

Important point noted in this disease is amenorrhoea coexisted with diabetes mellitus.

7. **Insulin resistance** - Type 2 diabetes has strong genetic component. It is a disorder characterized by insulin resistance. Insulin resistance means lack of responsiveness of skeletal muscles and hepatocytes of liver to insulin. Obesity in particular strongly associated with insulin resistance. Insulin resistance syndrome includes many abnormalities. This consists of spectrum of metabolic abnormalities that confer hyperinsulinaemia, hyperandrogenism, (oligomenorrhoea or amenorrhoea, hirsutism) **diabetes mellitus** and metabolic syndrome (X syndrome or insulin resistance syndromes)<sup>14</sup>.

The insulin resistance causes hyperglycemia and also causes hyperandrogenism, in turn hyperandrogenism results in **oligomenorrhoea or amenorrhoea** and hirsutism. Diabetes mellitus and amenorrhoea are both coexisting in insulin resistance syndrome.

Based on these observations it is commented that menstruating women are spared from prameha /diabetes mellitus. This gives a clear picture regarding the statement *streenam prameha na bhavanthi*. This statement is only based on thorough clinical observation, without subjecting for biochemical tests or any other diagnostic aids.

## CONCLUSION

The analysis based on textual references, the opinion is drawn that the women do suffer from prameha, but they may not menstruate. It is observed that amenorrhoea is the effect of diabetes mellitus, not the cause but both coexist in the following disorders. Sushruta's prameha includes hyperthyroidism, gigantism, acromegaly, cushing syndrome, and polycystic ovarian syndrome, insulin resistance syndrome, autoimmune hypothyroidism and obesity. Sushruta's view on prameha extends to endocrinology. His statements are based on scientific study. His ability to think out of the box has resulted in the invention of the topic *streenam prameha na bhavanthi*.

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