



PHYSIOLOGICAL STUDY OF SHUKRA DHATU W.S.R. TO PRAMEHA (DIABETES MELLITUS) – A NON INTERVENTIONAL RETROSPECTIVE CLINICAL STUDY

Dr. Shewale Yogesh Kashinath*¹, Dr. Pawar K. B.², Dr. Dhindhime R. S.³, Dr. Prashant Baghel⁴

^{1&4}PG Scholar, Kriya Sharir Dept., GAC Osmanabad.

²Asst. Professor, Kriya Sharir Dept., GAC Osmanabad.

³Professor and H.O.D, Kriya Sharir Dept., GAC Osmanabad.

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***Corresponding Author**

**Dr. Shewale Yogesh
Kashinath**

PG Scholar, Kriya Sharir
Dept., GAC Osmanabad.

ABSTRACT

Prameha is one of the leading and progressive diseases found in India.

It is a very complex disease in which there are many *dushyas* were shukra dhatu is one of them. *Shukra* i.e. *pumbeeja* is having an important role in *sahaja prameha*. *Prameha* is a *kulaja vikara* and occurs as result of *Beeja dosha*. *Shukra Dhatu* is responsible for reproduction and its vitiation leads to sex deability and impotency in the patient of *Prameha*. On the basis of its symptomatology, *Prameha* can be correlated to the features of Diabetes mellitus. In the present era, urbanization, stress and strain due to life style modifications, change in dietary habits lead in the rapid decline in the fertility in

India. On the basis of classical signs and symptoms of *Prameha* and *Shukra Dhatu Kshaya-vrudhhi lakshanas*, Semen examination; 30 diabetic and 30 non diabetic (control group) subjects were observed. The objective parameters significantly differ from control group. A significant reduction in semen parameters (semen volume, sperm count and morphology) had observed in *Prameha*. Maximum diabetes patients show symptoms like *Sadan*, *Shrama*, *Daurbalya* and *Maithun Ashakti*. Present study indicated that *Shukra Dhatu* is significantly reduced both qualitatively as well as quantitatively in *Prameha*.

KEY WORDS *Dhatu*, Diabetes, *Prameha*, Semen, *Shukra*, Sperm.

INTRODUCTION

Dosha, *dhatu* and *mala* are root factors of living body. These are compared to roots because as roots starts the life of plant, these three factors starts the life of human. *Dosha* are responsible for creating diseases in living body; *Malas* are those constituents of the body which are regularly eliminated from the body and thus keep body clean, and those which give support and strength to living body are called as *Dhatu*s. *Dhatu* supports the body physically as well as physiologically. The strength of the body depends on healthy *Dhatu*s.^[1,2] According to the principle of the formation of the 'Uttardhatu' from 'Purva dhatu' from *Aahrar-rasa*, *Shukra Dhatu utpatti* takes place (production). *Prasadabhaga* i.e. nutritive part of *Rasa dhatu* produces *Rakta dhatu*; *Parasada bhaga* of *Rakta dhatu* produces *Mamsa dhatu* and so on. From *Prasada bhaga* of *Majja Dhatu*, after the process of *Shukra Dhatvagni* *Shukra Dhatu* is produced. *Prasada bhaga* (nutritive part) of *Shukra Dhatu* form an embryo, it would be comparative with the modern science as semen contains the millions of Sperm.^[3]

Shukra dhatu is the last developed *dhatu* in *dhatu parinaman kram* of our body. It is considered as the best extract of all *dhatu*s and is responsible for *Bala* of the body.^[4,5] *Shukra* is made up of all *Panchabhautas* i.e. *Akash*, *Vayu*, *Agni*, *Jala* and *Pruthvi*. But it is mainly *Saumyagunapradhana* (*Saumya*). So it is of *Saumya swaroop*. *Shukra* is white, pure as well as excellent *dhatu* which is located in the entire body. The functions of *Shukra Dhatu* are *Dhairya* (Courage), *Chyavana* (Ejaculation of semen), *Dehabala* (Physical strength), *Preeti* (Sexual desire), *Harsha* (Excitement) but the main function of *Shukra Dhatu* is *Garbhotpadan* (Production of off-springs). *Purush Beej* and *Stri Beej* combinely produce new life. As well as cellular level production is also done by *Shukra dhatu*.^[6,7,8] *Prameha* is one of the leading and progressive diseases found in India. It is a very complex disease in which there are many *dushyas* i.e. *vata*, *pitta*, *kapha*, *meda* (fat), *mamsa* (muscle tissue), *kleda* (body fluids), *shukra* (semen), *shonit* (blood), *vasa* (muscle fat), *majja* (bone marrow), *lasika* (lymph), *rasa* (plasma), *ojas*.^[9]

D.M. is a metabolic disorder of carbohydrate, fat, and protein characterized by hyperglycemia with or without glycosuria. It is associated with long-term potentially catastrophic effects on almost all systems of the body. These can manifest as minor annoyances at first but then insidiously destroy the cellular components of a given body part, organ, or entire system. On the basis of its symptomatology *Prameha* can be correlated to the features of Diabetes mellitus. In the present era, urbanization, stress and strain due to life style modifications,

change in dietary habits lead in the rapid decline in the fertility in India. So the Shukra Dhatu having all the features of *Shukra Dhatu Sarata* as well as having all the parameters of the semen examination for having fertility are required. In ayurvedic samhitas, Acharyas briefly explained the symptoms of *Shukra Kshaya-Vridhhi*, which is very helpful to assessment the status of the *Shukra dhatu*.

In ayurvedic texts the symptoms of *Shukra Kshaya* are described briefly as less quantity of *Shukra Dhatu*, *Daurbalya* (weakness), *Mukhashosh* (dryness of mouth), *Shaithilya* (lethargic movements), *Maithune Ashakti* or *Klebya* (impotency), *Medra-Vrushana Vedana* (pain in penis and testis), delayed ejaculation, sometimes ejaculation with bleeding, local or generalized body pain, loss of sexual urge which may further results into impotency.^[10,11,12]

Aim and Objectives

The present study aimed at studying the *Shukra dhatu* in patients suffering from *Prameha*. To achieve the objectives were, to review the assessment of *Shukra dhatu* w.s.r. to *Prameha* and observe the quality of *Shukra* in *Prameha* patients.

MATERIALS AND METHODS

Materials

- Classical sign and symptoms of *Prameha*.
- Classical symptoms of *Shukra Dhatu Kshaya-Vridhhi*.
- Investigations according to Ayurvedic and Modern parameters.
- Semen analysis parameters according to WHO guidelines.

Methods

Patients were selected as per the inclusion and exclusion criteria. Patients were observed on the basis of classical signs and symptoms of *Prameha* and *Shukra Dhatu Kshaya-vrudhhi lakshanas*, *Ayurvedic*, *Semen examination according to WHO guidelines*.

Group A: 30 diagnosed patients of *Prameha* (Diabetes).

Group B: 30 Non-Diabetes individuals.

INCLUSIVE CRITERIA

1. The male patients will be selected on the basis of classical signs and symptoms of *Prameha*.
2. Patients between age group of 30 years to 60 years.

3. Patients having history of diabetes mellitus for minimum 5 years.

EXCLUSIVE CRITERIA

1. Female patients.
2. Age of Male patient less than 30 years and more than 60 years.
3. Person suffering from any severe systemic diseases.
4. Chronic complications will be discarded.
5. Patients with less than 5 years history of DM.

INVESTIGATIONS

- Blood Sugar: Fasting & Post prandial
- Urine: Routine and Microscopic
- Semen Analysis.

CRITERIA OF ASSESSMENT

Criteria for Diagnosis of *Prameha* by classical sign & symptoms:

- *Prabhut mutrata* (Polyuria)
- *Avil mutrata* (Turbidity in urine)
- *Pipasa adhikya* (Polydypsia)
- *Kshuda adhika* (polyphagia \ Increase in appetite)
- *Kar pada suptata* (Numbness in palm and foot)
- *Sweda adhikya* (Excessive perspiration)
- *Daurbalya* (Weakness)
- *Alasya* (General debility).

According to sign and symptoms of *Prameha* is correlated with DM. So according to modern science criteria for Diagnosis of *Prameha*, By American Diabetic Association which is accepted by WHO is followed^[9]

- Above Sign & Symptoms of *Prameha* plus
- Patients having random blood sugar level > 200 mg/dl.
- FBS > 126 mg/dl or
- PPBS > 200 mg/dl.

Objective parameters

1. Examination of parameters of semen sample will be carried out as per the guidelines of WHO.

2. Questionnaire based on Shukra Kshaya-Vridhhi Symptoms. Following sign and symptoms are as-

- Daurbalya
- Mukha Shosha
- Pandutvam
- Shrama
- Sadan
- Mendra Vrishan Vedana
- Maithun Ashakti & Klebya
- Alpa Shukra
- Shukra Chirat Prasichyet.

OBSERVATIONS AND RESULTS

- **Shukra Kshaya Symptoms wise distribution**

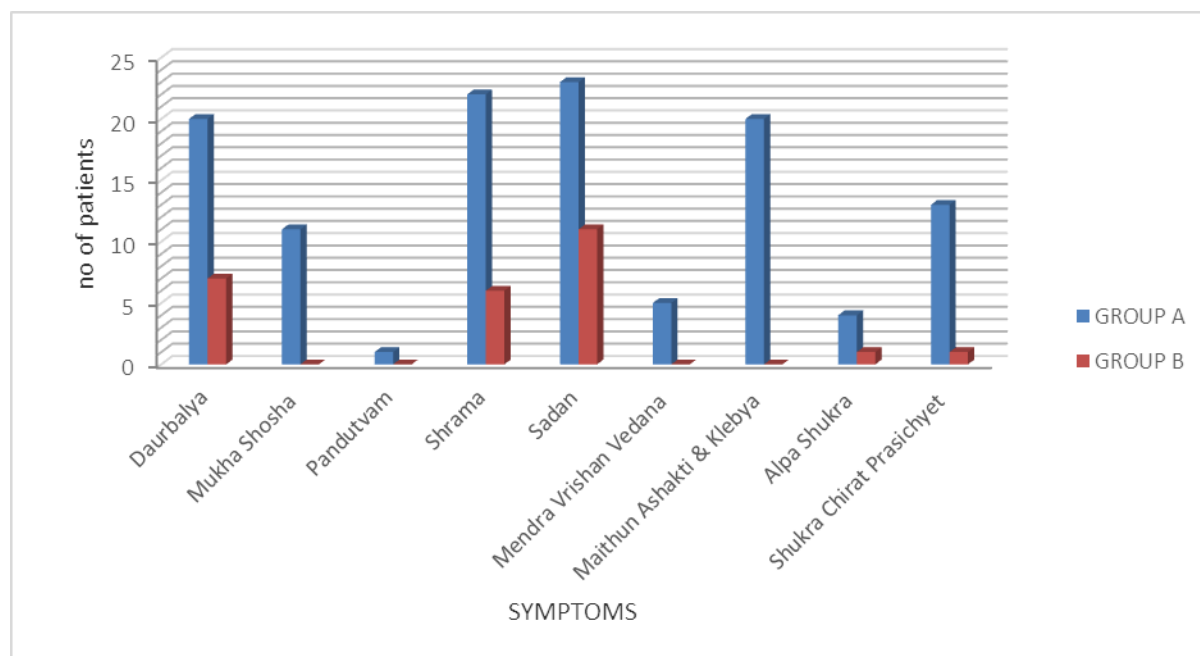
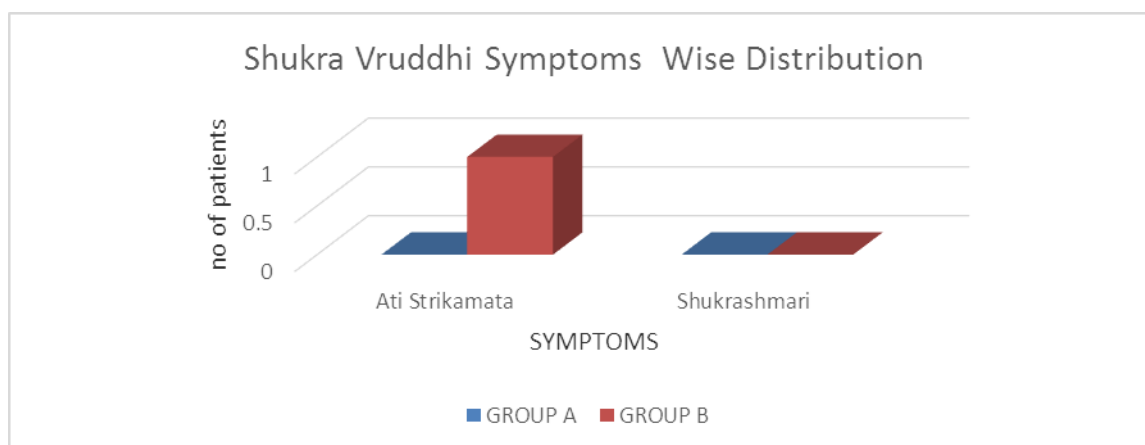


Figure no. 1: Shukra Kshaya Symptoms wise distribution.

Table 1: Shukra Kshaya Symptoms wise distribution.

Sr. No.	<i>Shukra Kshaya Symptoms</i>	Group A	Group B
1.	<i>Daurbalya</i>	20 (66.66%)	7 (23.33%)
2.	<i>Mukha Shosha</i>	11 (36.66%)	0
3.	<i>Pandutvam</i>	1 (3.33%)	0
4.	<i>Shrama</i>	22 (73.33%)	6 (20%)
5.	<i>Sadan</i>	23 (76.66%)	11 (36.66%)
6.	<i>Mendra Vrishan Vedana</i>	5 (16.66%)	0
7.	<i>Maithun Ashakti and Klebya</i>	20 (66.66%)	0
8.	<i>Alpa Shukra</i>	4 (13.33%)	1 (3.33%)
9.	<i>Shukra Chirat Prasichyet</i>	13 (43.33%)	1 (3.33%)

The present study in Group A, maximum number of patients i.e. 76.66% had *Sadan*, 73.33% had *Shrama*, 66.66% had *Daurbalya* and *Maithun Ashakti*, 43.33% had *Shukra Chirat Prasichyet*, 36.66% had *Mukha Shosha* and 16.66% had *Mendra Vrishan Vedana*, 13.33% had *Alpa Shukra* and 3.33% had *Pandutvam*. Where as in Group B, 36.66% had *Sadan*, 23.33% had *Daurbalya*, 20% had *Shrama* and 3.33% had both *Alpa Shukra and Shukra Chirat Prasichyet*.

**Figure No. 2: Shukra Vruddhi Symptoms Wise Distribution.**

In the present study, only in Group B 3.33% individual shows the symptom of *Shukra Vruddhi* as *Ati Strikamata*.

Statistical analysis

The information gathered on the basis of observation made about various parameters is subjected to statistical analysis in terms of Mean, Standard Deviation (SD). Un-paired 't' test was applied to carried out for the statistical significance. The results were interpreted at $p < 0.05$, $p < 0.01$ and $p < 0.001$ significance levels.

The obtained results were interpreted as –

Insignificant - $P > 0.05$

Significant - $P < 0.05$

Highly significant - $P < 0.01$.

Table 2: Overall result on different Semen Parameters.

	Group A (Mean ± SD)	Group B (Mean ± SD)	p Value	Interpretation
Volume	2.203±0.3348	2.41±0.317696	0.01721	Significant
Count	53.2±11.2415	68.2±16.63482	0.00013	Highly significant
Motility	48.833±8.6785	53.1667±8.457	0.05497	Insignificant
Morphology	45.6667±7.739	50.667±10.148	0.03608	Significant

There is significant difference in semen parameters i.e. Volume & Count of Semen, Morphology of Sperms in Group A than Group B. There is significant difference in the parameters of semen analysis between Group A (Individuals having Diabetes) than Group B (Individuals without Diabetes). Hence the above statistics shows that there is significant vitiation in Volume, Count and Morphology of Semen parameters.

DISCUSSION

In Ayurvedic texts various Dushyas described in *Prameha* are *Rasa*, *Rakta*, *Mamsa*, *Meda*, *Majja*, *Shukra*, *Sharir kleda*, *Vasa*, *Lasika* and *Oja*. *Shukra* is mentioned as *Dushya* among 10 *Dushyas* of *Prameha*. *Shukra* i.e. *pumbeeja* is having an important role in *sahaja prameha*. *Prameha* is a *kulaja vikara* and occurs as result of *Beeja dosha*. *Shukra Dhatu* is responsible for reproduction. Therefore vitiation of *Shukra* leads to sex debility and impotency in the patient of *Prameha*.

In the pathogenesis of this disease first of all predominant Kapha is vitiated causing further vitiation of *Meda* as a *Kleda*, later on there is *Kshaya* of *Kapha* leading to vitiating *Vata* which causes loss of the essence of *Rasadi Dhatus* including *Shukra* and *Ojas* through the *Basti*. Furthermore, the seat of *Apana Vayu* is *Vrishana*, *Basti*, *Medhra*, *Nabhi*, *Uru*, *Vankshana*, *Guda* etc. Its function also includes retention and ejaculation of *Shukra*. *Sushruta* says; in the disease *Prameha Vyana* and *Apana* are the causative factors which also cause *Shukra Dushti* leading to *Klaibya*. *Vata* causes depletion of *Shukra Dhatu* and causes *Shukra Meha*. *Shukra* also gets vitiated in the pathogenesis produces symptoms like *daurbalya* and

Kricchravyavayata, because normal function of *Shukra* is to maintain *Dehabala*. It also plays role in the precipittation of *Sahaja Prameha*.

In the present study, vitiation of *Shukra Dhatu* is considered with respect to *Kshaya* and *Vruddhi* symptoms of *Shukra Dhatu* described by classical texts and the seminal aspect i.e. Semen Analysis. *Maithun Ashakti* is the symptoms which can be correlated with the loss of libido and decreased sexual desire. The chief factors causing the condition are *Vata*, *Datukshaya* in general and *Shukrakshaya* in particular. *Acharya Sushruta* says; in the disease *Prameha Vyana* and *Apana* are the causative factors which also cause *Shukra Dushti* leadind to *Klaibya*. The aggravated *Vata* particularly the *Prana*, *Vyana* and *Apana* causes the impairment in the functioning of the *Indriyas*. Due to this leads to the loss or decrease in the sexual desire.

CONCLUSION

Mostly Diabetes affects the middle aged people living a sedentary life and Positive family history plays a major role in its development. So, Diabetes is a disease of people living a sedentary life with unhealthy lifestyle. Present study shows the patients having Diabetes history for minimum 5 years shows maximum symptoms of *Shukrakshaya* than Non diabetes individuals. About more than 66% patients of DM found with *Maithun Ashakti* i.e. Loss of libido and decreased sexual desire. More than 13% patients of DM found with *Alpa Shukra* i.e. less quantity of semen. Seminal examination between two groups shows significant difference, so it is concluded that there is significant reduction in semen parameters has been observed in the diabetic patient group. Our study indicated that *Shukra Dhatu* is significantly reduced both qualitatively as well as quantitatively in *Prameha*.

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