



Research Article

THE STUDY OF ETIOPATHOGENESIS IN SHUKRAKSHAYA

Raviteja Mane^{1*}, Shital S. Mane¹, Mandave Kundalik²

¹Assistant Professor, Dept of Rog Nidan Avum Vikruti Vigyana, Rural Institute of Ayurved, Research centre & Hospital, Mayani, Khatav, Satara, Maharashtra.

²Associate Professor, Dept of Streerog and Prasut Tantra, Rural Institute of Ayurved, Research centre & Hospital, Mayani, Khatav, Satara, Maharashtra.

KEYWORDS: *Nidan*

Parivarjan, Etiopathogenesis, Shukrakshaya.

ABSTRACT

Nidan Parivarjan is the first step towards *Chikitsa* of any disease. *Shukra* has an important functions, *Shukra* provides *Dhairya*, *Prasannata* (happiness), *Bala* (strength), *Praharsh* and *Bija* for *Garbhoptatti*. Due to modern life style *Dhatu poshan* gets vitiated. The result of *Dushit dhatu poshan*, *Shukra dhatu* is not nourished in proper way that is quantity and quality which leads to *Shukra kshaya*. It reflects in following symptoms of *Shukra kshaya* are *Dourbalya*, *Pandutva*, *Medhravedana*, *Vrishanvedana*, *Shukra avisarga*, *Chirat praseka*, *Maithuna ashakti*. Also the qualitative and quantitative vitiation of *Shukra dhatu* results in infertility. The aim is to study the aetiopathogenesis of *Shukrakshaya*. The Study of total 30 male patient was carried out after appropriate consultation. Subjective parameters are *Pandutva*, *Dourbalya*, *Medhravedana*, *Vrushanvedana*. Objective parameters are Semen volume, Sperm count, Sperm motility, Sperm morphology, Haemospermia. *Vata* and *Pitta Dosh* are main *Doshas* in the *Samprapti* of *Shukrakshaya*. Due to *Hetu sevan vata* and *Pitta prakopa* occurs and it affects *Dhatuposhana* and leads to *Shukra dhatu kshaya*. *Aharajhetus*, *Viharajhetus*, *Manasikhetus* and several other factors plays main role in *Shukrakshaya*.

*Address for correspondence

Dr. Raviteja Mane

Assistant Professor,
Dept of Rog Nidan Avum Vikruti
Vigyana, Rural Institute of
Ayurved, Research centre &
Hospital, Mayani, Khatav, Satara,
Maharashtra.
Email:
mitspajero2412@gmail.com
Mob. No. - 09850018749

INTRODUCTION

The ancient literature of Ayurveda provided by Acharyas from ancient period, with a clean and transparent vision about the past, present and future by the proper eradication of *Raja* and *Tamo gunas* from mind, which are known as *Aptas*. The basic constituents of a living body are considered as *Dosha*, *Dhatu* and *Mala*. Any imbalances of these constituents resulted into disease. Theories are generally applied while dealing with a patient are the *Panchbhautic* and *Tridoshik* theories. Simply '*Chikitsa*' is considered as removal of raised constituents, fulfill or maintain or create the decreased constituents and maintain the constituents in their own normal state in the body.

As mentioned above, a unique feature of Ayurveda is treatment which cures or subsides the disease completely and not produces any side effect. As per Ayurveda, '*Nidan Parivarjan*' is the first step towards *Chikitsa* of any disease.

If we consider disease as an effect, then *Nidan* is a cause. When there is a cause there is always an effect; we get this reference of cause and effect relationship since our Vedic literature.

In Ayurveda, the pathogenesis of disease is explained with the help of *Nidan-panchak*.

From *Nidan-panchak* *Nidan* is very important because *Nidan* plays a valuable role in disease production. So if we eliminate the cause then it will lead to elimination of disease totally.

Shukra has an important functions, *Shukra* provides *Dhairya*, *Prasannata* (happiness), *Bala* (Strength), *Praharsh* and *Bija* for *Garbhoptatti*.

The sole aim of procreation in every living being is survival of their race. And this holds true for human being also. The unsaid rule is that it is responsibility of each individual to try and pass on the best of their qualities to their offspring's. It is sperm in male and ovum in female that transmit the

genetic material of parents to next generation. The quality of their gametes reflects directly on the health of the progeny.

To produce a progeny four things are necessary i.e. *Rutu*, *Khsetra*, *Ambu* and *Bija*. *Bija* means both male and female fertility factors i.e. *Sukra* and *Artava*. If there is *Dusti* in any one of the above factors it will lead to infertility.

The person who is infertile is said to be *Nindya* according to Charaka. The person without a child is compared to the tree without branches. The grief of a man who faced the infertility problem is no less in modern society than it was for our fore fathers. Infertility affects the psychological harmony, Sexual life and social functions of the couples.

Now a day's *Shukrakshaya* and *Santanhinata* are the common problems due to disturbed daily routine, disturbed food habits, mental tensions and business all account of fast life. All these factors affect's the *Shukra*. In modern life style disturbed daily routine, inappropriate food habits, food having less nutrient value like fast food and bakery products, addictions, mental stress, business etc. all accounts of fast life leads to many diseases like Cancer, Diabetes, Obesity, Heart diseases, Psychological disorders, Infertility etc. Due to modern life style *Dhatu poshan* gets vitiated and *Shukra dhatu* is last one and very important for reproduction. As a result of *Dushit dhatu poshan*, *Shukra dhatu* is not nourished in proper way that is quantity and quality which leads to *Shukra kshaya*. It reflects in following symptoms of *Shukra kshaya* are *Dourbalya*, *Pandutva*, *Medhravedana*, *Vrishanvedana*, *Shukra avisarga*, *chirat praseka*, *maithuna ashakti*. Also the qualitative and quantitative vitiation of *Shukra dhatu* results in infertility.

Shukra kshaya is described under *Shukra dushti*. Here, *Vata dosha* along with *Pitta* undergo vitiation and the normal qualities and quantity of the *Shukra dhatu* is deranged. As a result of the vitiation of *Vata* and *Pitta doshas* the channels which carry *Shukra (Shukravaha strotas)* under goes *Dushti*, which in capacitates one normal individual from conceiving his life partner, ending in infertility.

The World Health Organization conservatively estimates that 80 million people suffer from infertility worldwide. The contribution of male factor to this infertility is reported as 25 to 40 % (W.H.O.).

As explained above, the cases of infertility are increasing around us and the ratio of its distribution is almost equal in urban and rural parts

of country. Due to stress factor, western culture, improper diet, advanced life style, Young men between the age of 20 to 50 years suffers from abnormal sperm count or other sperm abnormality. To find out prominent factors or causes of *Shukrakshaya*; As the main principle of Ayurveda is to treat disease in its first stage (*Nidan*) known as *Nidan Parivarjan*, the topic for study was selected as, "The study of aetiopathogenesis in *Shukrakshaya*".

AIM AND OBJECTIVES

Aim: To study the details aetiopathogenesis of *Shukrakshaya*

Objectives:

1. To Study in details about *Shukrakshaya* as per Ayurveda and modern texts.
2. To study the quantitative and qualitative semen analysis in patient of *Shukrakshaya*.

MATERIAL AND METHODS: The materials utilized for the study of *Shukrakshaya* was of two types, which are used utilized while conducting this project.

Review of literature: It was collected from classical books and Samhitas of Ayurveda were done thoroughly. References about *Shukradhatu* and *Shukrakshaya* were collected from Bruhatrayee, Laghutrayee, and other Ayurvedic literature available. Also detailed concept of semen was collected from modern books. Previously done Research work by different scholars in this field was referred and they were studied thoroughly. This previous work of different scholars was used as preliminary data for present project. Internet media were also used for completion of research work. Hypothesis was formed on the basis of references.

Place of work: Patients for clinical study were randomly selected from the OPD of our institute.

Inclusion Criteria

1. Age - above 21 years and below 45 years.
2. Patients from any religion, occupation and socio-economic status.
3. Patients having signs and symptoms of *Shukrakshaya*.

Exclusion Criteria

1. Congenital anomalies of Genital organs.
2. Surgical and Traumatically injured conditions of genital tract and organs.
3. Patients of diseases like varicocele in scrotum, accessory sex gland Infection.
4. Patients suffering from malignancy of genital tract and organs, obstructive Pathologies, syphilis, gonorrhoea, leprosy and abscess of genital tract and organs.

Methodology

Study Design-Observational study: Study of total 30 male patients was carried out after appropriate consultation. Special consent form was designed for the patient participating in this research. A special case format was prepared with clinical data.

Data was collected with the help of questionnaire. Collection of blood sample and semen sample of patient was done for laboratory study. The patients examined from institute were studied and included for data collection and total data was analyzed for conclusion.

Assessment criteria

Subjective parameters: i) *Pandutva* ii) *Dourbalya* iii) *Medhravedana* iv) *Vrushanvedana*

Objective parameters i) Semen volume ii) Sperm count iii) Sperm motility iv) Sperm morphology v) Haemospermia.

Plan of work

Diagnostic phase: Patient were diagnosed on the basis of signs and symptoms of *Shukrakshaya*. Semen analysis investigation was done. All patients were investigated for following laboratory tests.

1. CBC
2. BSL(R)
3. Semen analysis included.
 - Semen Volume
 - Sperm count
 - Sperm Motility
 - Sperm Morphology
 - Haemospermia

Assessment phase: Aetiopathogenesis of *Shukrakshaya* was assessed in regard to clinical signs and symptoms. Assessment of *Hetu* of *Shukrakshaya* was done with the help of questionnaire. For symptoms subjective parameters were considered. For signs objective parameters were considered. Semen analysis was observed on the basis of grading and scoring.

Criteria for Assessments

Shukra Parikshan (Physical examination)

Varna

Normal-*Sphatikavarna*

Abnormal-*Vaivarnya*

Swaroop

Normal-*Dravaswaroop*

Abnormal-*Grathitswaroop*

Abnormal-*Tanuswroop*

Gandh

Normal -*Madhugandhi*

Abnormal -*Durgandhi*

Grading and Scoring of Signs and Symptoms**Pandutva**

0 - normal

1 - Mild (Hb between 10 to 13 gm%)

2 - Moderate (Hb between 07 to 10 gm%)

3 - Severe (Hb below 07 gm%)

Dourbalya

0 - *Dourbalya* after climbing 23 to 28 steps

1 - *Dourbalya* after climbing 17 to 22 steps

2 - *Dourbalya* after climbing 11 to 16 steps

3 - *Dourbalya* after climbing 5 to 10 steps

Medhravedana

0 - no pain

1 - able to tolerate the pain without any treatment

2 - able to tolerate pain with some treatment

3 - unable to tolerate pain with treatment

Vrushanvedana

0 - no pain

1 - able to tolerate the pain without any treatment

2 - able to tolerate pain with some treatment

3 - unable to tolerate pain with treatment

Objective Parameters (Semen Analysis)**Collection of sample**

1. A 3 to 5 days abstinence is recommended before semen sample collection.
2. The most satisfactory specimen is that collected in the laboratory by masturbation.
3. The laboratory supplied clean, dry, sterile and leak proof wide mouthed and dried plastic container.
4. For semen collection, a private room attached to the laboratory was used.
5. The patients were asked to deliver semen sample to laboratory within 20 minutes.

Semen volume-It was measured by calibrated pipette. Normally, volume of semen is between 2.5 and 5 ml.

Assessment of Semen volume

0 - equal or more than 2.5 ml

1 - 2 ml – 2.5 ml

2 - 1 ml – 2 ml

3 - Less than 1 ml

Sperm count-(Oligospermia): This was done in Neubauer's chamber using a WBC pipette. Liquefied semen was drawn in WBC up to mark 0.5 and then the diluting fluid was drawn up to mark 11. The composition of diluting fluid was as under:

Sodium bicarbonate 5 gm

Formalin (neutral) 1 ml

Distilled water 100 ml

After mixing it charged the properly, charged the Neubauer's chamber. Allow the spermatozoa to settle down in 2 minutes. Then Examined under the microscope and counted the number of spermatozoa in two large peripheral squares (used for TLC counting) and then multiplied the number by 1 lakh (100,000) which given number of spermatozoa per milliliter:

In $1 \times 1 \times 0.1 \mu\text{l}$ volume Number of spermatozoa = $n \times 10$

But dilution factor is 10

So, number of spermatozoa per μl = $n \times 10 \times 10$

Or Number of spermatozoa per ml = $n \times 10 \times 10 \times 1000 = n \times 1 \text{ lakh}$

(where n is the average number of spermatozoa counted in two squares).

Assessment of sperm count:

Normal -0: Equal to or more than 20 millions/ml

Mild oligospermia-1: Sperm count between 15 to 20 millions/ml

Moderate oligospermia-2: Sperm count between 5 to 15 millions/ml

Severe oligospermia-3: Sperm count less than 5 million/ml

Sperm motility (Asthenozoospermia): A drop of liquefied semen placed on a clean glass slide, then covered it by cover slip and examined it under the microscope, first under the low power and then under high power. Result was expressed in percentage.

Assessment of sperm motility

Normal-More than 60% motile sperms

Mild asthenozoospermia: 1-50 to less than 60% motile sperms

Mod. asthenozoospermia: 2-40 to less than 50% motile sperms

Severe asthenozoospermia: 3-Less than 40% motile sperms

Observation and Result

1. Incidence of Age

Sr. No.	Age Group	Count	%
1.	21 - 25	01	03.33%
2.	26 - 30	14	46.67%
3.	31 - 35	10	33.33%
4.	36 - 40	05	16.67%
5.	41 - 45	00	00.00%
Total		30	100%

Out of 30 patients, 1 patient (3%) was from age group 21 - 25 years, 14 patients (47%) were with age between 26 - 30 years, 10 patients (33%) were with age between 31 - 35 years while 5 patients (17%) were having age between 36 - 40 years.

2. Incidence of Religion

Sr.No	Religion	Count	%
1	Hindu	29	96.67%
2	Muslim	01	03.33%
Total		30	100.00%

Out of 30 patients, 29 patients (97%) were Hindu while remaining 1 patient (3%) were Muslim.

3. Incidence of Marital status

Sr. No	Marital status	Count	%
1	Married	29	96.67%
2	Unmarried	01	03.33%
Total		30	100.00%

Out of 30 patients, 29 patients (97%) were married while remaining 1 patient (3%) was unmarried.

Sperm morphology: This was assessed by performing differential count of morphologically normal and abnormal spermatozoa types on stained smear. Smear was made on glass slide as for blood smears then placed the smear immediately in a fixative 95% ethanol before drying was occurred. The most suitable stain is Lishman stain. 200 spermatozoa examined under oil immersion and the percentage of abnormal forms noted.

Assessment of sperm morphology: Normal -equal to or more than 30% sperm shows normal morphology.

1 -20 to less than 30% normal sperms.

2 -10 to less than 20% normal sperms.

3 -less than 10% normal sperms.

Haemospermia-A drop of liquefied semen was placed on clean glass slide then covered with cover slip. observed under microscope. Slide examined under 45x objective.

Assessment of haemospermia

0 -No R.B.C./hpf in semen

1 -2 to 5 R.B.C./hpf present in semen

2 -6 to 9 R.B.C./hpf present in semen

3 -More than 10 R.B.C./hpf present in semen.

Above gradation was done only for diagnostic purpose

Statistical Methodology: Gradation of signs & symptoms and questionnaire, were assessed statistically on the basis of percentage of occurrence. Wilcoxon signed rank test was applied.

4. Incidence of Diet

Sr. No	Diet	Count	%
1	Mixed	22	73.33%
2	Vegetarian	08	26.67%
Total		30	100.00%

Out of 30 patients, 22 patients (73%) were having mixed diet while remaining 8 patients (27%) were vegetarian.

5. Incidence of Prakruti

Sr. No	Prakruti	Count	%
1	<i>Pitta - Kapha</i>	06	20.00%
2	<i>Pitta - Vata</i>	07	23.33%
3	<i>Vata - Kapha</i>	03	10.00%
4	<i>Vata - Pitta</i>	14	46.67%
Total		30	100.00%

Out of 30 patients, 6 patients (20%) were observed with *Pitta - kaphaprakruti*, 7 patients (23%) were observed with *Pitta- vata prakruti*, 3 patients (10%) were observed with *Vata - kapha prakruti* while remaining 14 patients (47%) were observed with *Vata - pitta prakruti*.

6. Incidence of Occupation

Sr. No	Occupation	Count	%
1	Chef	01	03.33%
2	Clerk	01	03.33%
3	Cook	03	10.00%
4	Engineer	02	06.67%
5	Driver	03	10.00%
6	Farmer	04	13.33%
7	Food seller	01	03.33%
8	Godown worker	01	03.33%
9	Industrial worker	04	13.33%
10	Jewellery worker	04	13.33%
11	Peon	01	03.33%
12	Police	01	03.33%
13	Shopkeeper	01	03.33%
14	Teacher	03	10.00%
Total		30	100.00%

Statistical Analysis: Incidences of various, *Aaharaj*, *Viharaj* and *Mansik hetus* are assessed with ‘One sample Wilcoxon signed rank test’ with hypotheses

Findings are presented along with proper summary statistics like mean, median, quartiles and S.D. as well as graphical methods like bar charts was used.

Assessment of signs and symptoms of *Shukra kshaya*

Parameters	Summary statistics						Wilcoxon signed rank test	P-value (one-tailed)
	Mean	S.D.	Q ₁	Median	Q ₃	n		
Symptoms								
<i>Pandutva</i>	1.400	0.62	1.00	1.00	2.00	30	406	< 0.001
<i>Dourbalya</i>	1.267	0.58	1.00	1.00	2.00	30	406	< 0.001
<i>Medhravedana</i>	1.233	0.67	1.00	1.00	2.00	30	351	< 0.001
<i>Vrushanvedana</i>	0.767	0.72	0.00	1.00	1.00	30	171	< 0.001
Objective parameters								
Semen Volume	1.267	0.74	1.00	1.00	2.00	30	351	< 0.001
Sperm count	1.800	0.48	2.00	2.00	2.00	30	465	< 0.001
Sperm motility	0.900	0.71	0.00	1.00	1.00	30	231	< 0.001
Sperm morphology	0.000	0.00	0.00	0.00	0.00	30	0	1.000
Haemospermia	0.000	0.00	0.00	0.00	0.00	30	0	1.000

- Panduta:** Median score of *Panduta* was significantly higher than zero (P-value < 0.001) at 5% level of significance as suggested by Wilcoxon signed rank test. The median score of *Panduta* was 1 and mean score was 1.4 with S.D. of 0.621. i.e., there was significantly high incidence of *Panduta*.
- Dourbalya:** Median score of *Dourbalya* was significantly higher than zero (P-value < 0.001) at 5% level of significance as suggested by Wilcoxon signed rank test. The median score of *Dourbalya* was 1 with mean 1.267 and S.D. of 0.583. i.e., there was significant incidence of *Dourbalya*.
- Medhravedana:** Median score of *Medhravedana* was significantly higher than zero (P-value < 0.001) at 5% level of significance as suggested by Wilcoxon signed rank test. The median score of *Medhravedana* was 1 with mean 1.233 and S.D. of 0.679. i.e., there was significant incidence of *Medhravedana*.
- Vrushanvedana:** Median score of *Vrushanvedana* was significantly higher than zero (P-value < 0.001) at 5% level of significance as suggested by Wilcoxon signed rank test. The median score of *Vrushanvedana* was 1 with mean 0.767 and S.D. of 0.728. i.e. there was significant incidence of *Vrushanvedana*.
- Semen volume: (Hypospermia):** Median score of hypospermia was significantly higher than zero (P-value < 0.001) at 5% level of significance as suggested by Wilcoxon signed rank test. The median score of semen volume was 1 with mean 1.267 and S.D. of 0.740. i.e., there was significantly less semen volume in patients than 2.5 ml.
- Sperm count: (Oligospermia):** Median score of Oligospermia was significantly higher than zero (P-value < 0.001) at 5% level of significance as suggested by Wilcoxon signed rank test. The median score of sperm count was 2 with mean 1.800 and S.D. of 0.484. i.e., sperm count in patients was significantly less than 20 M/ml.
- Sperm motility: (Asthenozoospermia):** Median score of Asthenozoospermia was significantly higher than zero (P-value < 0.001) at 5% level of significance as suggested by Wilcoxon signed rank test. The median score of sperm motility was 1 with mean 0.900 and S.D. of 0.712. i.e., sperm motility in patients was significantly less than 60%.
- Sperm morphology: (Teratospermia):** There was no incidence of Teratospermia at all (P-value = 1) at 5% level of significance as suggested by Wilcoxon signed rank test. i.e., there was no observance of abnormal sperm morphology.
- Haemospermia:** There was no incidence of haemospermia at all (P-value = 1) at 5% level of significance as suggested by Wilcoxon signed rank test. i.e., there was no observance of R.B.C. in semen.

Shukra parikshana

- Varna:** All 30 samples (100%) were observed with normal *Varna*.
- Swaroop:** 2 samples (7%) were having *Tanu swaroop* while remaining 28 samples (93%) were observed with normal *Swaroop*.
- Gandha:** All 30 samples (100%) were having normal *Gandha*.

Incidence of Hetus

Aaharaj Hetu

Aaharaj Hetus (Rasa)	Summary statistics						Wilcoxon signed rank statistic	P-value (one-tailed)
	Mean	S.D.	Q ₁	Median	Q ₃	n		
<i>Amla</i>	1.200	0.407	1.00	1.00	1.00	30	465	< 0.001
<i>Lavan</i>	1.633	0.615	1.00	2.00	2.00	30	465	< 0.001
<i>Katu</i>	2.633	0.556	2.00	3.00	3.00	30	465	< 0.001
<i>tikta</i>	1.333	0.479	1.00	1.00	2.00	30	465	< 0.001
<i>Kashaya</i>	1.567	0.774	1.00	1.00	2.00	30	465	< 0.001
<i>madhur</i>	1.133	0.434	1.00	1.00	1.00	30	465	< 0.001
<i>Kshara</i>	1.367	0.490	1.00	1.00	2.00	30	465	< 0.001
<i>Vishamashan</i>	1.333	0.959	1.00	1.00	2.00	30	300	< 0.001
<i>Adhyashan</i>	0.567	0.728	0.00	0.00	1.00	30	91	0.001

Viharaj Hetu

Viharaj Hetus	Summary statistics						Wilcoxon signed rank test	P-value (one-tailed)
	Mean	S.D.	Q ₁	Median	Q ₃	n		
<i>Dhumrapan</i>	0.90	1.155	0.00	0.00	1.75	30	105	< 0.001
<i>Madyasevan</i>	0.80	0.925	0.00	1.00	1.00	30	136	< 0.001
Tobacco	1.90	1.269	1.00	2.50	3.00	30	276	< 0.001

<i>Upavas</i>	0.50	0.572	0.00	0.00	1.00	30	105	< 0.001
<i>Ratrijagaran</i>	1.10	0.712	1.00	1.00	2.00	30	300	< 0.001
<i>Vegvidharan</i>	0.66	0.606	0.00	1.00	1.00	30	171	< 0.001
<i>Vyavay</i>	1.667	0.922	1.00	1.50	2.00	30	406	< 0.001
<i>Sharirik Shrama</i>	2.167	0.874	2.00	2.00	3.00	30	435	< 0.001
<i>Ushna Vihara</i>	1.900	1.348	0.00	3.00	3.00	30	231	< 0.001
<i>Prawas</i>	1.067	0.907	1.00	1.00	1.00	30	276	< 0.001
<i>Akalyonigaman</i>	0.000	0.000	0.00	0.00	0.00	30	0	1.000
<i>Diwasvap</i>	0.300	0.535	0.00	0.00	0.75	30	36	0.004

Mansik hetu

Mansik Hetus	Summary statistics						Wilcoxon signed rank statistic	P-value (one-tailed)
	Mean	S.D.	Q₁	Median	Q₃	n		
<i>Krodh</i>	0.900	0.759	0.00	1.00	1.00	30	231	< 0.001
<i>Chinta</i>	1.200	0.997	0.00	1.00	2.00	30	231	< 0.001
<i>Dukh</i>	0.167	0.379	0.00	0.00	0.00	30	15	0.018
<i>Mansik shrama</i>	1.300	0.952	1.00	1.00	2.00	30	276	< 0.001

Percentage of Incidence of Lakshanas

Lakshanas	No. of patients with Lakshanas	Total no. of patients	%
<i>Pandutva</i>	28	30	93.33%
<i>Dourbalya</i>	28	30	93.33%
<i>Medhravedana</i>	26	30	86.67%
<i>Vrushanvedana</i>	18	30	60.00%
<i>Hypospermia</i>	26	30	86.67%
<i>Oligospermia</i>	30	30	100.00%
<i>Asthenozospermia</i>	21	30	70.00%
<i>Teratospermia</i>	0	30	0.00%
<i>Haemospermia</i>	0	30	0.00%

Percentage of Incidence of Hetu

Aaharaj Hetu	No. of patients with Hetu	Total no. of patients	%
<i>Amla</i>	30	30	100.00%
<i>Lavan</i>	30	30	100.00%
<i>Katu</i>	30	30	100.00%
<i>Tikta</i>	30	30	100.00%
<i>Kashaya</i>	30	30	100.00%
<i>Madhur</i>	30	30	100.00%
<i>Kshara</i>	30	30	100.00%
<i>Vishamashan</i>	24	30	80.00%
<i>Adhyashan</i>	13	30	43.33%
Viharaj Hetu	No. of patients with Hetu	Total no. of patients	%
<i>Dhumrapan</i>	14	30	46.67%
<i>Madyasevan</i>	16	30	53.33%
<i>Tobacco</i>	23	30	76.67%
<i>Upavas</i>	14	30	46.67%
<i>Ratrijagaran</i>	24	30	80.00%
<i>Vegvidharan</i>	18	30	60.00%
<i>Vyavay</i>	28	30	93.33%
<i>Sharirik Shrama</i>	29	30	96.67%
<i>Ushna Vihara</i>	21	30	70.00%
<i>Prawas</i>	23	30	76.67%
<i>Akalyonigaman</i>	0	30	0.00%
<i>Diwasvap</i>	8	30	26.67%
Mansik Hetu	No. of patients with Hetu	Total no. of patients	%
<i>Krodh</i>	21	30	70.00%

Chinta	21	30	70.00%
Dukh	5	30	16.67%
Manasik shrama	24	31	77.42%

Lakshanas	0		1		2		3	
	count	%	count	%	count	%	count	%
Pandutva	2	6.67%	14	46.67%	14	46.67%	0	0.00%
Dourbalya	2	6.67%	18	60.00%	10	33.33%	0	0.00%
Medhravedana	4	13.33%	15	50.00%	11	36.67%	0	0.00%
Vrushanvedana	12	40.00%	13	43.33%	5	16.67%	0	0.00%
Semen Volume	4	13.33%	15	50.00%	10	33.33%	1	3.33%
Sperm count	0	0.00%	7	23.33%	22	73.33%	1	3.33%
Sperm motility	9	30.00%	15	50.00%	6	20.00%	0	0.00%
Sperm morphology	30	100.00%	0	0.00%	0	0.00%	0	0.00%
Haemospermia	30	100.00%	0	0.00%	0	0.00%	0	0.00%
Aaharaj Hetu	0		1		2		3	
	count	%	count	%	count	%	count	%
Amla	0	0.00%	24	80.00%	6	20.00%	0	0.00%
Lavan	0	0.00%	13	43.33%	15	50.00%	2	6.67%
Katu	0	0.00%	1	3.33%	9	30.00%	20	66.67%
Tikta	0	0.00%	20	66.67%	10	33.33%	0	0.00%
Kashaya	0	0.00%	18	60.00%	7	23.33%	5	16.67%
Madhur	0	0.00%	27	90.00%	2	6.67%	1	3.33%
Kshara	0	0.00%	19	63.33%	11	36.67%	0	0.00%
Vishamashan	6	20.00%	12	40.00%	8	26.67%	4	13.33%
Adhyashan	17	56.67%	9	30.00%	4	13.33%	0	0.00%
Viharaj hetu	0		1		2		3	
	count	%	count	%	count	%	count	%
Dhumrapan	16	53.33%	6	20.00%	3	10.00%	5	16.67%
Madyasevan	14	46.67%	10	33.33%	4	13.33%	2	6.67%
Tobacco	7	23.33%	4	13.33%	4	13.33%	15	50.00%
Upavas	16	53.33%	13	43.33%	1	3.33%	0	0.00%
Ratrijagaran	6	20.00%	15	50.00%	9	30.00%	0	0.00%
Vegvidharan	12	40.00%	16	53.33%	2	6.67%	0	0.00%
Vyavay	2	6.67%	13	43.33%	8	26.67%	7	23.33%
Sharirik Shrama	1	3.33%	6	20.00%	10	33.33%	13	43.33%
Ushna Vihara	9	30.00%	1	3.33%	4	13.33%	16	53.33%
Prawas	7	23.33%	18	60.00%	1	3.33%	4	13.33%
Akalyonigaman	30	100.00%	0	0.00%	0	0.00%	0	0.00%
Diwasvap	22	73.33%	7	23.33%	1	3.33%	0	0.00%
Manasik Hetu	0		1		2		3	
	count	%	count	%	count	%	count	%
Krodh	9	30.00%	16	53.33%	4	13.33%	1	3.33%
Chinta	9	30.00%	9	30.00%	9	30.00%	3	10.00%
Dukh	25	83.33%	5	16.67%	0	0.00%	0	0.00%
Manasik Shrama	7	23.33%	10	33.33%	10	33.33%	3	10.00%

DISCUSSION

Shukrakshaya is a disease or condition in which Shukradhatu is qualitatively and quantitatively affected. Shukrakshaya disease has been explained by Bruhatrayees and Laghutrayees. Acharya Charaka has explained Shukrakshaya lakshanas also Charaka explained Nidanās of

Shukrakshaya in Vajikaran adhyaya. The nidanas given in classics are applicable in this disease. Whereas main Doshas are Vata and Pitta in Samprapti of Shukrakshaya. Clinically it is observed that Aharaja nidanas like Katu, Lavan, Kashaya, Kshara padarth Sevan, Vishmashan and Viharaja

Hetu like Tobacco Chewing, *Madyasevan*, *Dhumrapana*, *Ushna Vihara*, *Shrama*, *Ativyavaya* are most commonly found, leads to Qualitative and quantitative *Kshaya* of *Shukra*. Also *Manasik hetu* like *Manasik shrama* (mental stress), *Atichinta*, *Atikrodh* were observed.

Vata and *Pitta Dosh*a are main *Dosh*as in the *Samprapti* of *Shukrakshaya*. Due to *Hetu sevan vata* and *Pitta prakopa* occurs and it affects *Dhatuposhana* and leads to *Shukra dhatu kshaya*.

Discussion of General observation

Age: Out of total 30 patients maximum number of patients was found in age group 26 to 30 years (46.67%). At this stage of life subjects are more concerned about having a progeny and when they fail for it, they come to the doctor.

Religion: There were 96.67% patients found in Hindu religion. There were 3.33% patients found in Muslim religion. Above distribution shows that maximum number of patients was found in Hindu religion. In selected area of study Hindu Population is greater, it may be reason and Hindu found dominancy.

Marital Status: Maximum number of patients was found married (96.67%). Most of the patients were from Gynecology O.P.D. and their female partners were suffering from infertility.

Prakruti: In this observational study, there were 20.00% patients found with *Pitta-Kapha prakriti*, there were 23.33% patients found with *Pitta-vata prakriti*, there were 46.67% patients found with *Vata-pitta prakriti*, there were 10.00% patients found with *Vata-kapha prakriti*. Above distribution shows that maximum patients found with *Vata-pitta prakriti* (46.67%). As *Prakupit vata* and *Pitta dosha* are responsible for *Shukra kshaya*, patients having *Vata* and *Pitta* as main body constituent are more prone to *Shukra kshaya* as they have these two *Dosha* are in large quantity in their body and slight diet which can cause *Prakop* of these *Dosh*as will lead to *Shukrakshaya*. Total 90% subjects were having these two *Dosha* in maximum in their body constituent.

Occupation: Maximum patients were industrial worker (13.33%), jewellery worker (13.33%), farmer (13.33%) and cook (10.00%), driver (10.00%). In above data all patients were exposed to heat (thermal), for normal sperm production temperature of scrotal region should be less than body temperature, but due to heat exposure the temperature raised and sperm production is impaired leading to *Shukrakshaya*.

Shukra parikshana

1) **Varna:** All 30 samples (100%) were observed with normal *Varna*.

2) **Swaroop:** 2 samples (7%) were having *Tanu swaroop* while remaining 28 samples (93%) were observed with normal *Swaroop*.

3) **Gandha:** All 30 samples (100%) were having normal *Gandha*.

Discussion on Hetus

Type of Diet: It was observed that 73.33% of patients were having mixed diet while 26.67% of patients were vegetarian.

Aaharaj Hetu

Amla rasa: *Amla rasa sevan* seen in 80% of patients in mild grade, 20% in moderate grade. *Ati amla sevan* is responsible for *Pitta prakopa* which plays an important role in *Samprapti* of *Shukrakshaya*.

Lavan rasa: It was seen that 6.67% patient were taken *Lavan rasa* in severe grade, 50.00 % of patients are taken *Lavan rasa* in moderate grade and 43.33% patients taken in mild grade. Excess consumption of *Lavan rasa* like fried fish, salty chips, Chinese food were responsible for *Pitta prakopa* due to *Ushna guna* which leads to *Shukrakshaya*. It acts as *Shukraghna*. Acharya Sushruta mentioned it as *Punsatvopghatak*.

Katu rasa: It was seen that 66.67 % of patients were taking *Katu rasa* in severe grade, 30.00% of patients are taken in moderate Grade and 3.33% of patients taken in mild grade. Excessive intake of *Katu rasatmak ahar* like chilies, Chatnis, spicy food, spicy non-veg dishes were responsible for *Vata* and *Pitta prakopa* which plays major role in *Samprapti* of *Shukrakshaya*.

Tikta rasa: It was observed that 66.67 % of patients were taking *Tikta rasa* in mild grade and 33.33% patient had taken in moderate grade. excessive intake of *Tikta rasa* aggravates *Ruksha* and *Khara* properties of *Vata dosha* which is responsible for the *Shukra shoshan*.

Kashaya rasa: In this study 60.00 % of patients are taken *Kashaya rasa* in mild grade, 23.33% patients had taken in moderate grade and 16.67% patients had taken in severe grade. Excessive intake of *Kashya rasatmaka ahara* like *Supari* Chewing, Vegetables like *Ambada*, *Mulak* responsible for *Vata prakopa* which involving in *Samprapti* of *Shukrakshaya*.

Madhura rasa: In this study 90.00 % of patients are taken *Madhurarasa* in mild grade, 6.67% patients taken *Madhura rasa* in moderate grade and 3.33% patients had taken in severe grade.

Kshara Padarth sevan: In this study it was seen that 63.33 % of patients are taken *Kshara padarth* seven in mild grade and 36.67% patients had taken in moderate grade. *Kshara padartha* were having *Ushna*, *Tikshna* and *Laghu* properties which hampers the *Punsatva* of subjects.

Vishmashan: 13.33% of patients were having habit of *Vishmashan* in severe grade, 26.67% and 40.00% patients having in moderate and mild grade respectively.

Adhyashan: In this study 30.00% of patients having habit of *Adhyashan* in mild grade and 13.33% patients having in moderate grade. Due to *Adhyashan Agnimandya* takes place which produces *Ama*. This *Ama* involves in *Samprapti* of *Shukrakshaya*.

Viharaj hetu

Dhumrapan: Total 46.67% patients were smokers while 16.67% of patients of them had done severe *Dhumrapan*. It was reported in previous studies that smoking (*Dhumrapan*) reduced testosterone production as well as nicotine inhibits LH secretion in males. It was also stated that due to smoking there is higher level of circulating estradiol which potentially impacts spermatogenesis.

Madyasevan: Total 53.33% of patients having habit of *Madyasevan* while 6.67% of them had *Atimadyasevan*. *Madya* have *Vyavayi* and *Vikasi guna* which leads to *Dhatushithilya* and *Ojakshaya* further leads to *Shukrakshaya*. According to previous studies the testes have been shown to be highly susceptible to ethanol. Alcohol impairs testosterone production and also hampers hypothalamic pituitary gonadal axis which results in decreased spermatogenesis as well as sperm count. Impaired sperm motility was noted in chronic alcohol users.

Tobacco: Total 76.67% patients have tobacco addiction while 50.00% of them had severe habit of tobacco chewing. Due to excessive tobacco chewing *Pitta prakopa* takes place due to *Ushna*, *Vidahi* and *Tikshna guna* of tobacco. Along with that *Vata Prakopa* also takes place due to *Laghu*, *Vyavayi* and *vikasi guna* of tobacco. It affects *Snidgha*, *Mrudu*, *Guru guna* of *Doshas* as the quality of *Kapha* and *Shukra* are similar, there may be decrease in *Shukra* qualitatively and quantitatively which leads to *Shukrakshaya*. Also *Rasa dushti* takes place due to qualities of tobacco leads to *Dhatwagnimandya*. Due to this *Uttarottar dhatu utpatti* hampered which lasts in *Shukrakshaya*.

Upavas: Total 46.67% patients having habit of *Upavas*. Due to *Upvas vata* and *Pitta prakopa* occurs which plays important role in the *Samprapti* of *Shukrakshaya*.

Ratrijagaran: In this study it was seen that total 80% of patients had history of *Ratrijagaran*. Due to *Ratrijagaran vata prakopa* occurs, *Rukshata* increases which alters quality and quantity of *Shukra*.

Vegvidharan: It was observed that total 60.00% of patients had history of *Vegvidharan*. Due to

vegavidharan Vataprakopa and *Apanavayu dushti* takes place which hampers its normal function of *Shukranishkraman* and leads to *Shukrakshaya*.

Vyavay-Ativyavaya directly affects *Shukradhau*. In this study total 93.33% of patients had history of *vyavay* while 23.33% of patients had *Ativyavaya*.

Sharirik Shrama: It was observed that total 96.67% of patients had *Sharirik Shrama* and while 43.33% of patients had in severe grade.

Ushna Vihara: In this study it was seen that total 70.00% of patients were working near hot zone while 53.33% of patients were in severe grade.

For normal sperm production temperature of scrotal region should be less than core body temperature. But due to heat exposure, the temperature raised and sperm production is impaired.

Prawas: Total 76.67% patients had done *Prawas* while 13.33% patients had done *Atiprawas*. Due to *Ati prawas* there was *Vata prakopa* with its *Ruksha*, *Laghu* properties. Due to this *Rasakshaya* and *Uttarottar Dhatukshaya* occur which results in *Shukrakshaya*.

Akalyonigaman: In this study *Akalyonoga* man not found as significant *Hetu*.

Diwasvap: Total 26.67% of patients had history of *Diwasvap*.

Manasik hetu: *Krodh*, *Chinta* and *Manasik shrama* were included in *Manasik hetus*. It was observed that maximum number of patients (70.00%) having *Chinta*, while 10.00% having *Atichinta* and 70.00% were having *Krodhadhikya*. In this study it was seen that 77.42% patients having *Manasik shrama*. *Manasik shrama* resembles like mental stress.

Chinta is one of the *Dushti hetu* of *Rasadhatu*. *Atichinta* leads to *Vata prakopa* and *Rasakshaya* which will affect the production of *Uttar dhatu* and lastly *Shukra*.

Krodha causes *Prakopa* of *Pitta dosha* which is one of the causes of *Shukrakshaya*. According to previous studies it was stated that mental stress and strain affects hypothalamus pituitary axis and thus inhibiting the release of GnRH when there is low level of testosterone and LH, decrease the spermatogenesis.

Anuvanshik: No *Anuvanshik* factor was observed in any of total 30 patients.

Sthanik Shastrakarma: No *Sthanik Shastrakarma* was observed in any of total 30 patients.

Sthanik Ksharkarma: No *Sthanik Ksharkarma* was observed in any of total 30 patients.

CONCLUSION

- *Aharajhetus* like *Katu*, *Kasaya*, *Lavan Rasatmak ahara*, *Ksharapadarthsevan*, *Vishmashan* are main causative factors of all other *Aharajhetus*.

- *Viharajhetus* like *Dhumrapan*, *Madyasevan*, *Ratrijagaran*, *Ativyvaya*, *Sharirik Shrama* are the main causative factors of *Shukrakshaya* all other *Viharajhetus*.
- Factors like Working near or in hot zone, Tobacco chewing, Riding, plays main role in *Shukrakshaya*.
- *Manasikhetus* like *Atichinta*, *Manasik Shrama* (Mental stress), *Atikrodhaare* main causative factors of *Shukrakshaya*.
- All these factors were accountable to hamper normal values of Semen volume, Sperm count, Sperm motility.

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