

CONCEPTUAL UNDERSTANDING OF SHUKRA DUSHTI W.S.R TO SEMINAL PARAMETERS

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ABSTRACT

Shukra and *Shonitha* are pre-requisites for producing a healthy progeny. *Ayurveda* has explained the abnormalities in these primordial cells thousands of years ago which can damage fertility.

Ayurveda explains eight abnormalities in *Shukra Dhatu*(semen) due to affliction of various *doshas*. In recent times, medical science is using advanced techniques in visualizing the abnormalities of semen. It is need of the hour to understand the changes found in semen analysis in comparison with the classically mentioned *Shukra Dushti Lakshanas* and eventually arrive at a possible co-relation. Semen analysis is a laboratory technique used in evaluating the abnormalities in semen which causes male infertility. Semen is a mixture of secretions from several components of the genital tract. Analysis of the ejaculate includes the characteristics of the seminal fluid (volume, pH, viscosity), and of the sperm cells including the sperm count (sperm concentration), their movement (motility), their shape (morphology), WBC, sperm antibodies, presence of sperm agglutinins, fructose. In this paper, an attempt is made to compare the physical, chemical and microscopic changes in the semen recorded in the semen analyses with the classically mentioned *Ashta Shukra dushti*.

Key Words: *Shukra Dhatu*, *Shukra Dushti*, Semen Analysis

INTRODUCTION

Ayurveda is based on the *Tridosha* theory. This *tridosha* theory has widely been used to understand not just physiology of the body but also the pathologies. The pathological conditions of *Shukra* have been elaborated under the name *Shukra Dushti*. *Shukra Dushti* are the eight different types of seminal pathologies mentioned in the classics (Table.1).These eight kinds of *Shukra Dushti* have been elaborated in the texts along with their *chikitsa* modules. Semen Analysis is an investigation carried to assess the fertility of an individual and the findings in the analyses are the markers

of various conditions affecting fertility. These abnormal changes in the semen are corroborated to various pathologies and thus making diagnosis and treatment easy. So, a comprehensive knowledge of all the *Shukra Dushti* and the changes in semen found through semen analysis is always necessary in proper understanding of the involvement of *dosha* in the pathology.

MATERIALS AND METHODS:

Aims and Objectives:

1. To conceptually establish the co-relation postulated.

2. To make an effort to establish a probable correlation of involvement of *doshas* in causing seminal pathologies (*Shukra Dushti*) with special reference to seminal parameters.

Conceptual Study: Ayurveda texts have mentioned various characters of *Shukra*

Dhatu which can be considered in finding out various *Shukra dushti* with respect to the predominant *dosha* resulting in *dushti*. The following table gives a brief *doshic* involvement in different *shukra dushti*

TABLE 1 – Tridosha involvement in different Shukradushti

CHARAKA ²		SUSHRUTHA ³	
Dosha	ShukraDushti	Dosha	ShukraDushti
VATA	Phenila	VATA	Vataja
	Tanu	PITTA	Pittaja
	Rooksha	KAPHA	Kaphaja
PITTA	Vivarna	RAKTA	Kunapagandhi
	Puti	SLESHMA VATA	Granthibhuta
KAPHA	Picchila	PITTA SLESHMA	PutiPuya
RAKTAADI Dhatu	Respective Samsrushta	PITTA VATA	Ksheena
VATA KAPHA	Avasadi	SANNIPATA	Mutrapurisha Gandhi

Understanding Physical and Biochemical Semen Characteristics -

Volume: The normal volume of seminal fluid ranges between 2ml and 6ml per ejaculation¹. Any semen sample which measures below 1.5ml per ejaculation is termed as hypospermia and which measures more than 6ml is termed as hyperpermia. Hypospermia is one condition where there is reduced semen volume, may be because of the predominance of morbid *vata dosha* resulting in *vataja shukra dushti*. If an individual is not able to produce any traceable amount of seminal fluid, then the condition is termed as Aspermia (absolute absence of semen) again because of morbid *vata*.

Colour and Turbidity: *Shukra* is *Shweta*(white), or of the colour of *Sphatika*(alum). Semen is normally translucent or whitish-gray opalescent in colour. Blood cells found in semen (hematospermia) can colour the semen pink, bright

red or brownish red. The presence of blood in semen is abnormal and it points towards *raktadhatu upasrushta Shukra dushti*. The presence of debris, non-liquified streaks of mucus can be considered as *kaphaja shukra dushti* and the former condition where debris (other *dhatu*samsrushta) are found require further evaluation. **Semen acid-base balance (pH):** The pH of semen is measured using a specially treated paper blot that changes colour according to the pH of the specimen that it is exposed to. The pH of normal semen is slightly alkaline ranging from 7.2 to 7.8. Prostatic secretions are acidic while the secretions of the seminal vesicles are alkaline. Therefore, alterations in pH may reflect a dysfunction of any one or both of these accessory glands.

If the pH of the sample is below the normal range (<7.2), then it shows that the semen sample is acidic in nature which in turn gives the hint of involvement of

morbid *Pitta* in *Shukra* resulting in *Shukra dushti* like *vivarnata*, *putigandha* & other *Pitta varnavedana*.

Charaka enlists the qualities of *shudhasukra* in *chikitsa sthana* among which *avidaahi* is also one. This *avidaahi* quality of *shukra* can be affected if the pH of the semen sample is on the acidic side making the sample *vidaahi*. The same *vidaahiguna* of the sample can reduce the liquefaction time of the seminal fluid and can even kill sperms because of the increase in acidic property.

Liquefaction: Semen is normally produced as a coagulum. Semen specimen will usually liquefy within 60 minutes. The failure to liquefy within one hour is abnormal showing signs of predominance of *kaphadosha* resulting in *dushti* like *avasadi*, *picchila* according to *Charaka* and *kaphaja*, *granthibhuta shukra dushti* according to *Sushruta*. If the liquefaction time is less than 5mins, it gives us the idea that the sample is *tanu* and *rooksha* may be because of the predominance of *vata-dosha* in causing the *shukra dushti*.

Viscosity: Non-liquefaction and excessive viscosity are two separate conditions. Viscosity is measured after complete liquefaction has occurred. Viscosity is considered normal if the liquefied specimen can be poured from a graduated beaker drop by drop with no attaching agglutinum between drops. The character of the semen with excessive viscosity may be because of *Kaphajadushti* (*Sushruta*) or *avasadi* (*vata-kaphaja*, *Charaka*) type of *shukra dushti*. The role of increased viscosity is that it may interfere with the ability of sperm to travel from the site of deposition into the cervix or uterus by making the sperm cells sluggish and thus affecting the fertility of the sample.

Sperm Count: A semen sample containing sperms more than 20 million for every millilitre is said to be Normospermic. WHO Guideline Manual for the Examination & Processing of human Semen, 2010 replaces the lower limit of 20 million sperm cells per millilitre to 15 million. If the total number of sperms is below 40 million per ejaculate or below 20 million per millilitre of semen, then the condition is termed as oligospermia/oligozoospermia. Oligospermia may be called as *KsheenaShukra* which is the result of morbid *vata* and *pitta dosha*. If there are no sperm cells in the semen sample, then the condition is called as Azoospermia. Azoospermia can be inferred to have the involvement of *dushtavata* in the pathogenesis. The sample can also be diagnosed with oligo-asthenospermia if morbid *vata* is involved in the pathology where there is reduced motility associated with reduced sperm count. Presence of sperm agglutinates turns the semen sample *Avasadi* (*Charaka*) or *Granthibhuta* (*Sushruta*) may be because of the dominance of morbid *Sleshma* and *Vatadosha* together. The presence of sperm agglutinates increases the liquefaction time of the sample affecting the fertility of the individual.

Morphology: A normal sperm has a smooth oval shaped head that is 5-6 micrometers long and 2.5 to 3.5 micrometers broad (less than the size of a needle point), a well defined acrosome (cap), neck, mid-piece and tail. Abnormal sperms will carry defects in head, tail or both such as large or crooked head, double head, double tail or no tail. Primary morphological defects are more severe abnormalities and are thought to originate while the sperms are being developed within the seminiferous epithelium of the testes. Secondary defects are lesser serious defects and are believed

to arise during passage through the epididymis or by mishandling after ejaculation. Such morphological changes can be attributed to morbid *vata* and *kaphadosha* involvement in the pathology.

Motility: Asthenozoospermia & Oligoasthenospermia- Asthenozoospermia is the condition when the motility of the sample is less than 40% (both rapidly motile and progressively motile put together) and if it is associated with sperm count below 20mil/ml, then it is called as Oligoasthenozoospermia. This reduced motility prevents the sperms from reaching the ovum in the fallopian tube thus affecting the fertility of the semen sample may be due to morbid *Vata* and *Pitta Dosha*. Asthenozoospermia can be called as *Vataja Shukra Dushti* where the motility is af-

ected by the *samsarga* of vitiated *vata* with the *Shukradhatu*.

Other cells: Pus Cells, epithelial cells, bacterial cells and Red Blood cells: Presence of pus and other cells in the semen sample can be a result of any inflammation or infection in the genitor-urinary system. This can be a result of conditions like epididymitis, TB of the genitals, orchitis, prostaticitis, hydrocele, varicocele, filariasis, etc. These findings can be understood as *anyadhatu samsrushta shukra*.

STATISTICAL DATA: For the purpose of the study, 50 semen analysis reports were randomly selected and analysed from various laboratories in Bangalore (Table.2).

Table 2: Observations of the reports

Seminal Findings	No. of Samples
Azoospermia	4
Oligozoospermia	2
Oligoasthenospermia	3
Asthenozoospermia	3
Teratozoospermia	0
Asthenoterato-zoospermia	2
Oligoasthenoteratospermia	2
Oligonecroteratospermia	1
Necrozoospermia	0
Normospermia	31
Increased viscosity	2
Sperm Agglutination	1
Hypospermia	1
Hyperspermia	1
Pus cells/Pyospermia	2
Prolonged Liquefaction	3

OBSERVATIONS

- One of the semen analyses though had normal physical characteristics like opaque greyish-white appearance, al-

kaline to litmus paper was found to be Azoospermic. The volume of the collected sample was only 1ml which is remarkably less when compared with the normal values i.e., between 2ml

and 6ml. So, *pramana pareeksha* is one of the important physical parameters to consider before commenting on the sample apart from microscopic examination.

- A few of the semen analyses reports included in the study though had sperms less than the lower limit (20mil/ml) had good semen volume(2-6ml/ejaculation).
- Another sample was found to be asthenospermic though all other semen parameters were within normal limits.
- In one of the reports, the volume of the semen sample was found to be low associated with oligo-asthenoteratospermia and the other with oligo-necro-teratospermia showing pathological readings in many of the seminal parameters probably owing to morbid *tridoshas*.

DISCUSSION:

The physical and biochemical changes found in the semen analysis attributed to a specific combination of *dosha* always presents with features similar to the *dosha* involved. For example, if morbid *Vata Dosha* is involved in the pathogenesis, then it makes the semen sample *tanu*(thin), *phenila*(froathy).

Some men with low sperm counts are nevertheless fertile. This uncertainty as to the lower level of sperm density, percent motility, and percent normal forms in fertile semen stems from two issues. First, many factors produce temporary aberrations in sperm count, and in men who present with semen of equivocal quality it is necessary to examine three or more ejaculates to determine whether abnormal findings are permanent or temporary. Second, the seminal fluid is routinely evaluated by

tests that do not assess the functional capacity of sperm.⁴

CONCLUSION:

It is very interesting to know that by proper assessment of physical and biochemical features of semen in semen analysis, a physician can understand the *dosha* involved in the *samprapti*(pathology) better. Thus, it becomes easier and logical for a doctor to plan treatment after knowing the *dosha* affecting *Shukra Dhatu* resulting in *Shukra Dushti*. Apart from physico-chemical findings, the biological state of the semen also has an important role in determining the fertility of the sample. As there seems to be no test to assess the functional capacity of sperm, semen analysis becomes inadequate to comment on the fertility of a semen sample. Thus the knowledge of relation of *Dosha* in causing abnormalities in *Shukra* becomes crucial in planning the treatment.

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