

## CONCEPTUAL STUDY TO UNDERSTAND THE EFFECT OF *KSHAARIYAJALA* (ALKALINE WATER) ON *SHUKRA* WITH SPECIAL REFFERNCE TO MALE INFERTILITY

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### ABSTRACT

*Ayurveda* is considered as science of life, it does not merely concentrate on the diseases rather it promotes practicing healthy life in order to prevent the diseases. To maintain this *Dinacharya*, *Rutucharya* and *Sadhvrutta* has been advised. Adopting these along with *Trayopastambha* helps to maintain state of *Swastha*. *Jala* (water) is the prime factor for existence of life and survival. Two third part of body is comprised of fluids. Water forms most of the fluid part of the body, varying from 45 -75% of total body weight. *Lakshanas* and *Guna-Karma* of *Shuddajala* which is suitable for consumption are stated clearly in classics. Water having the pH more than 7 is considered as alkaline in nature. pH of commercially available packed drinking water and water from the purifier ranges from 8 up to 12 or even more. *Shukra* is seventh among the *Sapta Dhatus* and *Garbhotpadana* is considered as the principal function of *Shukra*. *Kshaara* is *Shresta Pumsatvopaghataka* and *Shukraghna* (spermicidal), Prolonged usage of *Kshaara* is not advisable, as *Kshaara* posses *Gunas* which are opposite to that of *Shukra* it causes adverse effects on the reproductive system of body. Here attempt is made to explain alkaline water (*Kshaariyajala*) is one of the contributing factors for male infertility by taking different sources explained in *Ayurveda* classics and contemporary knowledge related to alkalinity.

**Keywords:** *Kshaariyajala*, *Shukra*, Semen, Alkaline water, Male infertility

### INTRODUCTION

Male infertility is a condition resulted from faulty lifestyle, influenced profoundly by environment, including lifestyle and food intake.

*Ayurveda* considers *Ahara* (diet), *Nidra* (sleep) and *Bramhacharya* (sexual activity) as *Trayopastambha* (Tripod of life)<sup>[1]</sup>. Sex is a

basic instinct, but sexual behaviour is a learned ability. *Dharma*, *Artha*, *Kama* and *Moksha* are the four *Purusharthas* (objectives of life) explained in *Ayurveda*<sup>[2]</sup>. To attain *Moksha*, *Purushartha* are basic need of every individual. The concept of *Kama* reveals that the recreational aspects like pleasure are equally important to its procreation aspects. *Shukra* is seventh among the *Sapta Dhatus*<sup>[3]</sup> and *Garbhotpadana* is considered as the principal function of *Shukra*<sup>[4]</sup>. One more important tripod is *Ahara*, which includes solid and liquid diet. Often more emphasis is laid on the solid food than liquid food. Liquids also play a major role in maintaining health. Liquid diet majorly consists of drinking water. The qualities of best water for drinking are slightly astringent, sweet, thin, slimy and does not block the channels of body<sup>[5]</sup>. Two third part of body is comprised of fluids and water forms most of the fluid part of the body. *Kshaariya Jala* is the water which is alkaline in nature. Body fluids play a significant role in transport mechanism, metabolic reactions, in maintaining texture of the tissue, in temperature regulation and thus maintaining homeostasis<sup>[6]</sup>.

### AIM AND OBJECTIVES

To understand the effect of *Kshaariya Jala* on *Shukra* with special reference to male infertility through literary study

### SOURCE AND METHODS

Literary and conceptual study will be undertaken by the data compiled from *Brihatrayis*, other classical text, internet and correlated with knowledge of contemporary science on the subject

### Review of literature

*Shareera* is composed of *Panchamahabhautas*<sup>[7]</sup>, *Jala* is one such component of the body which attributes the function that maintains the *Jaliya Amsa* (fluid components). Major source of water is the one which falls down as rain from the *Akasha*. The rain water gets contaminated with environmental heat and pollution, acquires the properties such as unctuousness, acidic, alkaline etc. before settling down in the ground<sup>[8]</sup>. The quality of water depends on where it is found. Water when falls on the earth attains *Guna* based on the type of soil, in white soil it is astringent, in pale soil it is bitter, in brown soil it is alkaline, in *Usara* it is saline, in black soil it is sweet and in hilly areas it is pungent. These are the six properties of water positioned on the earth<sup>[9]</sup>. The qualities of best water for drinking are slightly astringent, sweet, thin, slimy and does not block the channels of body.

*Shukra* is seventh among the *Sapta Dhatus*. Synonyms of *Shukra* are *Beeja*, *Veerya*, *Retas*, *Pourush* etc. *Shukra* comes out during *Stri* and *Purusha Samyoga*, because of sexual act (*Chesta*), passionate attachment (*Sankalpa*) and physical pressure (*Pidana*). It is explained by giving simile as water comes out of a wet cloth when it is squeezed<sup>[10]</sup>. The characters of *Shudda Shukra* are *Sphatikabham*, *Dravam*, *Snigdham*, *Madhuram*, *Madhugandam*, *Bahala*, *Guru* and *Picchila*<sup>[11]</sup>. *Shukravaha Srotas* is the main location of *Shukra Dhathu*, *Shepha* (penis) and *Vrushana* (testis) are principle organ of *Shukra Dhatu*<sup>[12]</sup>. *Shukra Dhatu* is formed as the *Snehamsha* of *Majja Dhatu*. *Vayu* and *Akasha Mahabhautas* creates *Sousirya* in the *Asthi* and *Shukra* oozes out from the inner *Majja* through the finest pores of the *Asthi* just like that as the *Udaka* leaks out from a new earthen pot<sup>[13]</sup>. *Garbhotpadana* is considered as the principal

function of *Shukra* along with this it also possess other functions they are Courageousness, Physical development, Attraction towards opposite sex, Strength, Pleasure of coitus<sup>[14]</sup>.

Infertility is a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse<sup>[15]</sup>. Male infertility refers to the inability to cause pregnancy in a fertile female after having unprotected sexual intercourse for a period of 1 year. Most of the causes are related to deficiencies in the semen. Semen quality is used as a surrogate measure of male fertility. Infertility is one of the major health problem and male infertility accounts for approximately one-fifth of all infertility cases. It occurs to an estimated population of 15% of couples and approximately 30% infertilities are due to a male factor in general. Causes of infertility in men can be explained by deficiencies in ejaculate (Azoospermia), sperm motility (asthenospermia) and sperm morphology (teratospermia).

The word *Kshaara* is derived from the root word *Kshara*, means to melt away or corrosive. *Kshaara* is defined as one that does the *Ksharana*<sup>[16]</sup>. *Gun*as of *Kshaara* are *Ushna*, *Tikshna*, *Laghu* and *Soshana*<sup>[17]</sup>. It is explained as *Natyupayogi Dravyas*<sup>[18]</sup>, *Shrestha Pumsatvopaghataka dravya*<sup>[19]</sup>, *Shukraghna*<sup>[20]</sup>. *Kshaariyajala* is the water which is alkaline in nature.

Two third part of body is comprised of fluids. Water forms most of the fluid part of the body, varying from 45 -75% of total body weight<sup>[21]</sup>. In water there are alkaline minerals like calcium, sodium, magnesium and potassium etc<sup>[22]</sup>. These minerals carry out important role of controlling physiological functions of the human body by distributing alkaline minerals to the

blood vessels and tissue. Alkalinity is a measure of the capacity of the water to resist a change in pH that would tend to make the water more acidic. pH of any fluid is the measure of its hydrogen ion concentration relative to that of given standard solution. It's measured on a scale from 0 to 14. More the acidic, a solution will be lower pH. More the alkaline, higher will be number. A pH of around 7 is considered neutral, alkaline water has pH above 7.0. The pH is of major importance in determining the Corrosive effect<sup>[23]</sup>. Permissible limit of pH for drinking water is pH 6.5 to 8.5<sup>[24]</sup>. Every function of the body is maintained by the efficient flow of water. Apart from the distribution of water, it also transports the elements like hormones, chemical messengers and nutrients first to the vital organs in turn every organ produces a substance to be made available to the rest of the body. Water is very essential on daily bases and minimum requirement of water is the amount that equals to the amount excreted by the body, thus prevents adverse effects such as dehydration.

## DISCUSSION

Several factors can interfere with spermatogenesis and reduce sperm quality and production. Water pollution is one among them. Alkaline water has been widely advertised and believed to boost the metabolism, reduce acid level in blood stream, and hence help to absorb nutrients more quickly and maintain natural alkalinity in the cells thereby balance the physiological state and promote health. Considering these positive benefits people are more attracted towards the alkaline diet where they knowingly or unknowingly consuming water having pH more than 8.5. Commercially available water is having pH ranges till 12 or even more, in the form of packed drinking water and water from purifier

at home. Unfortunately, contemporary life style, fast food diet etc., causes acidity. To compensate this, people have started consuming alkaline water having more pH than permissible limits for longer duration. Male infertility rate is also increasing day by day, so it may assume that alkaline water is one of the contributing factors for causing male infertility.

In *Ayurveda* classics, *Kshaara* is explained as *Na-Atyupayogi Dravyas*. Prolonged usage of *Kshaara* is not advisable, as it causes adverse effects on the body. *Kshaara* is *Shrestha Pumsatvopaghataka dravya* as it possesses the spermicidal effect (*Shukraghna*). By the morbid affliction of *Shukra*, there will be impotency and erectile dysfunction. In spite of this, if conceptions take place, progeny will be sick or impotent or short lived or deformed. There is more likelihood that the conception will not take place, if conceived also it will be miscarried or aborted.

The probable action of *Kshaara* over *Shukra* can be explained under the following headings

#### **Effect of Tikshna and Ushna Guna of Kshaara on Shukra**

*Tikshana* and *Ushna Guna* absorbs *Jaliya Amsa* in the *Shukra*, hence *Sowmya*, *Snigdha*, *Drava*, *Bahula Guna* of *Shukra* may be affected. In contemporary understanding volume, pH, viscosity of semen is affected.

#### **Effect of Laghu Guna of Kshaara on Shukra**

*Laghu Guna* composed of *Akasha* and *Vayu mahabhuta*, there by *Gunas* like *Laghuta* and *Rukhata* of *Shukra* may increase. When this *Guna* increases it may affect the *Guru*, *Bahula*, *Drava Gunas*. In contemporary science it can be

understood as affecting the seminal parameters such as viscosity, volume and pH.

#### **Effect of Soshana Guna of Kshaara on Shukra**

*Soshana* is long term consequence of *Kshaara* intake, it is explained that *Kshaara* increases *Kledata* first, later it does the *Soshana* due to its inherent qualities. It affects almost all *Gunas* of *Shukra*. In contemporary view it can be interpreted as affecting the volume, odour, pH, liquefaction and morphology of Semen. Thereby, all these properties of *Kshaara* does *Dushana* of *Shukra* both qualitatively and quantitatively.

### **CONCLUSION**

*Ahara*, includes solid and liquid diet. Often more emphasis is laid on the solid food than liquid food. Liquids also play a major role in maintaining health. Liquid diet majorly consists of drinking water. *Jala* is considered as the prime factor for existence and survival of every creature. The qualities of best water for drinking are slightly astringent, sweet, thin, slimy and does not block the channels of body and attributes the function to maintain the *Jaliya Amsa*. *Guna-karma* of *Jala* depends on the quality of soil and place where it is found. *KshaariyaJala* is the water which is alkaline in nature (pH>7). *Kshaariya Drvayas* possesses the properties *Tikshna*, *Ushna*, *Laghu* and *Soshana* which are antagonist to *Shukra* which is *Sowmya* in nature and having the principal function of *Garbhotpadana*. Hence *Kshaariya Jala* is *Pumsatvopaghataka (infertility)* and *Shukraghna* (spermicidal effect). Due to consumption of alkaline water (*Kshaariya Jala*) beyond permissible limit for prolonged duration it may act as a contributory factor in causing male infertility and hence is not advisable.

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**Source of Support: Nil**

**Conflict Of Interest: None Declared**

How to cite this URL: Somanath Ginni & Prathiba Kulkarni: Conceptual Study To Understand The Effect Of Kshaariyajala (Alkaline Water) On Shukra With Special Reference To Male Infertility. International Ayurvedic Medical Journal {online} 2018 {cited February, 2018} Available from: [http://www.iamj.in/posts/images/upload/459\\_463.pdf](http://www.iamj.in/posts/images/upload/459_463.pdf)