

## DIET DURING MANAGEMENT OF INFERTILITY WITH SPECIAL REFERENCE TO MALE INFERTILITY

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### ABSTRACT

*Nitya sevaneeya aharas* are mentioned for daily dietary consumption in Ayurveda. It includes food items which can promote the health of *dhatu* and maintain the balance of *tridoshas*. It is proved with studies that *nitya sevaneeya ahara* make a balanced diet. The present article has collected information from classical Ayurveda text books, research paper including review papers and original articles and prepared the review. The present review is prepared with a purpose to recommend the use of *nitya seva neeya ahara* as a diet during management of male infertility. Malnutrition and changed eating behavior also count to occurrence of infertility as these are sources of free radical formation. As healthy eating habits are highly ignored in our society it is important to correct the diet first. The positive change brought in diet may aid in assisting the defects in sperm parameters.

**Keywords:** *Nitya sevaneeya aharas*, *dhatu*, *tridosha*, Malnutrition

### INTRODUCTION

Infertility is an ailment which affects the physical, emotional, mental and social dimensions of health. There are multiple reasons for occurrence of male infertility which can broadly be divided into physical, structural, hormonal, sexual, environmental and dietary factors. Diet is an ignored factor during treatment of infertility. As per reports of study it has been found that unhealthy eating behaviors in males of reproductive age are increasing in the present era<sup>1</sup>. The deficiency of micronutrients and anti-oxidants play an important role in causing male infertility. Dietary habits like intake of high fat and high calorie food can alter the sperm parameters. While at the same time

intake of healthy food items rich in antioxidants can improve fertility.

Ayurveda recommends the use of '*nitya sevaneeya ahara*' for daily dietary consumption. The *nitya sevaneeya ahara dravyas* are meant for health promotion and preservation. These food items are enriched with many *ayurveda* properties like *deepana* (stimulating the digestive fire), *brmhana* (nourishing), *rasayana* (rejuvenating) etc; along with these properties it is also having specific actions on human sperm parameters too.

In the present review paper food items has been selected from the *nityopayogeeya ahara dravyas* which

are mentioned to have specific impact on fertility according to classics.

### AIM AND OBJECTIVES

- The present study is a review prepared with the purpose of highlighting the importance of diet in reproductive health in males.

It also establishes the effectiveness of *nitya sevaneeya ahara* in improving male infertility.

### MATERIALS AND METHODS

Classical Ayurveda and modern textbooks, Research papers and journals were thoroughly reviewed for the study.

#### *Nityasevaneya aharas*

Among the *nitya sevaneeya ahara* mentioned in classical textbooks of Ayurveda, *sashtika shali* (rice which matures in 60 days), *godhuma* (wheat), *saindhava* (rock salt), *amalaka* (gooseberry), *yava* (barley), *anthareeksha jala* (rainwater), *godhugdha* (cow's milk), *ghritam* (ghee), *jangala mamsa* (meat of animals in arid places), *madhu* (honey), *dadima* (pomegranate), *mridvika* (grapes), *patola* (snake gourd) were found to have a beneficial effect in improving fertility, especially in males.

#### **Pancha mahabhuta in formation of shukra dhatu.**

The *shukra dhatu* is formed out of *jala mahabhoota*<sup>6</sup>. The *aharas* with *madhura rasa* are predominant in *jala mahabhuta*, it is nourishing also. The food items like *shastika Sali*, *godhuma*, *ghee*, milk etc has predominant *Madura rasa* and thus can enhance fertility.

#### **Role of agni in formation of shukra dhatu**

Judicious intake of nutritious food is not just enough for getting proper nourishment; the food has to be properly digested. *Jatharagni* is responsible for digestion of *ahara* to *ahara rasa*<sup>4</sup> *Agni* should be in its *samavasta* for proper digestion. Proper balance of *doshas* is also needed for nourishment of *dhatu*. *Dhatu vagni* is responsible for nourishment of succeeding *dhatu*. *Srotorodha* leads to improper nourishment of succeeding *dhatu*, this may ultimately affect *shukra dhatu*. For attaining *sroto shodhan* and for improving *agni deepana*, *pachana dravyas* should be used then only the *jeevaneeya* and *brahmana* properties of *ahara* will get absorbed into the gross body. The drugs mentioned in the *nityopayogeeya ahara* have *deepana pachana* property along with *jeevaneeya* and

*brahmana* property and is hence beneficial during management of fertility.<sup>2,4</sup>

#### **Role of ahara in formation of sukra.**

The *ahara* which is rich in nutrients get converted into *ahara rasa* and this *ahara rasa* nourishes the *sapta dhatus*. The *ahara* with the properties like *jeevana*, *brmhana*, *rasayana*, *ojo vardhana* are required for the nourishment of the *sapta dhatu* and formation of *shukra dhatu*. As the *shukra dhatu* is possessing *shadrasa*,<sup>3</sup> *ahara* which are with *shad rasa* should be used for *shukra dhatu*, production.

#### **Unhealthy food and male fertility.**

The male reproductive system is affected by whole body metabolism. According to Ayurveda the *ahara* (food) that we eat forms the *ahara rasa*, and this *ahara rasa* nourishes the *sapta dhatu*. The nourishment of a particular *dhatu* is required for the nourishment of the succeeding *dhatu*. So, food plays a noticeable role in the health and balanced state of *dhatu*.

Testicular metabolism is affected by the intake of high energy food<sup>7,8</sup> and fat rich foods. Soy isoflavones, processed red meat and sweets can adversely affect the sperm concentration and motility<sup>9</sup>. In a study it was found that intake of more vegetable and fruit diet had positive effects on the sperm parameters.<sup>10,11</sup>

#### **Free radicals and its effect on sperm.**

The common free radicals which can lead to damage in the sperm DNA are hydroxyl superoxide and hydrogen peroxide radicals, these free radicals has the capacity to agglutinate the sperm. It also can negatively affect the sperm motility and decrease its capacity for fusion with the oocyte.<sup>12</sup>

More amounts of free radicals in the consumed food can lead to the production of 8-oxo deoxyguanosine, formed due to oxidation of sperm DNA and this can lead to mutation and fragmentation of the sperm DNA.

#### **Role of antioxidants and flavonoids in promoting quality of sperm parameters.**

Antioxidants has the capacity to neutralize the free radicals and eliminate its dexterous effect on the sperm.<sup>13</sup> Antioxidants like vitamin C, vitamin E and Beta carotene can prevent the generation of reactive oxygen species. There have been studies which prove

the positive effects of antioxidant supplements in improving sperm parameters<sup>14</sup>.

### Properties of *nitya sevaneeya ahara* according to Ayurveda related to infertility.

All drugs in *nitya seva neeya aharas* are nourishing in nature.

*Shastika Sali* is having *tridoshaghna* property it is *swadu* and *snigdha* also.

*Godhuma* has *vrishya* and *jeevaneeya* properties according to *kaiyadeva Nighandhu*. And it is *sukrala* according to *Bhava prakasha*.

*Saindava* is *vrishya* and *tridoshaghna* according to *Charaka, Susrutha and Dhanwanthari nighandhu*.

*Saindava* is also considered *vrishya* and as having *rasayana* properties according to *Bhavaprakasam*

*Amalaki* is *vayasthapana* according to *charaka*, it is *vrisyam* according to *susruta, sodala nighantu* and *Dhanvantari nighandhu* and *Bhavaprakasha*,

*Yava* is having *vrishya* property according to *Ashtanga hridaya*.

*Ksheera* is having *jeevaneeya* and *rasayana* property according to *ashtanga hridayam* and *sangraham*.

*Ghee* possesses *ojovardhaka, rasayana, shukra vardhak, vaya sthapna* and *vrishya* properties according to *charaka*

*Madhu* is having *vajikarana* effect. It is *sukrala* according to *Bhavaprakasham*. It is *vrishya* according to *Charaka, Kaiyadeva nighantu* and *Dhanwanthari nighandhu*.

### Nutrients contents in *nityaseva neeya ahara dravyas*.

The *nitya seva neeya aharas* mentioned in Ayurveda is a complete package of nutrients for the normal functioning of the body. It makes a balanced food<sup>15</sup>.

Carbohydrates – *Shashtika shali, godhuma* and *yava*.

Proteins- *Mudga, shashtika shali, godhuma* and *jangala mamsa*.

Fat - *Ghrita* and Milk.

Vitamins- *Amalaki, Draksha, Dadima* and *Patola*.

Minerals - *Triphala* and *Pathya*.

Water -*Antariksha jala*<sup>16</sup>.

## DISCUSSION

The drugs in these groups are rich in its antioxidant content. In an in vivo study it was reported that Pomegranate juice was found to increase sperm concentra-

tion, motility, germinal layer thickness, and it also decrease the abnormal sperm rates<sup>17</sup>.

The phytochemical present in grapes named transveratrol was found to enhance spermatogenesis in an in-vivo study; by stimulating the hypothalamic-pituitary gonadal axis<sup>18</sup>.

antioxidants like Vitamin E, Vitamin C and Carotenoids can balance the rate of free radical generation and the effect of antioxidants in scavenging it<sup>19</sup>.

Low fat dairy intake was found to improve sperm parameters. The milk improves production of insulin growth factor 1 which helps in improving the sperm parameters<sup>20</sup>.

Micronutrients like zinc, folate, selenium, amino acids are important in spermatogenesis and its deficiency can lead to infertility<sup>21</sup>.

*Saindhava* can thus help as a micronutrient supplement. Honey can improve the erectile functions by vasodilation by producing nitrous oxide. Most of the drugs which are mentioned for *nityopayoga* in Ayurveda are nutritionally complete; they are rich in antioxidants and thus help in improving the overall health of the individual.

## CONCLUSION

Male infertility can occur due to multiple factors, but in the present age the ignorance towards consuming a healthy diet can lead to malnourishment and infertility. Diet counseling and modification is thus an important part in the management of male infertility. The *Nitya Sevaneeya ahara dravyas* are having *tarpana, jeevaneeya, brahmana* properties which can improve the general health of the body which along with its *vrishya* properties help in curing infertility. So consumption of the food and drinks mentioned in Ayurveda for daily consumption during treatment of infertility can yield better results.

As each food item has its own unique properties, the diet should be selected appropriately after considering the *agni, dosha*, and disease condition of an individual. A healthy diet can thus be planned and prepared by selecting the *ahara dravyas* from the list of *nitya sevaneeya ahara* appropriate for the individual's health condition and this may assist during treatment process of male infertility.

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