

EVALUATION OF FEMALE REPRODUCTIVE COMPONENT IN AYURVEDA AND ITS RELATION TO FEMALE INFERTILITY

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ABSTRACT

Introduction: The science which deals with the morphology of human body is discussed under *Sharir Vichaya*, which is a parallel study with modern anatomy. The Female reproductive system is specifically considered amongst the different systems of the human body. It comprises of 2 parts viz. the internal genitalia and the external genitalia. In Ayurveda a wide range of terminologies are available to understand different structures of female reproductive system. The mentioning of primary and secondary infertility is exhibited here with the interpretation of causes. A total case of 78 infertile female patients are assessed for this study. *Yoni vyapad* or *Artavavyapad*, their therapeutic aspects are emphasized along with *bandhyatwa*. **Methods:** The causes of female infertility in relation to morphological abnormality is studied in 78 infertile female patients. **Result and Discussion:** In the applied study, in clinical profile, the morphological involvement of reproductive organ in female infertility is assessed by 5 investigations viz. USG, HSG, AMH, TSH, Hb%.

Keywords: Female Reproductive System, Infertility, *Bandhyatwa*

INTRODUCTION

The science that deals with morphological component of human body is discussed under *SharirVischaya*, understood with anatomy in modern parlance. Among the different systems of human body, the female reproductive system is considered here, responsible for the genesis of future generation. It consists of two parts i.e. internal genitalia and the external genitalia. The female internal genitalia contain 2 ovaries, 2 fallopian tubes or uterine tubes, uterus and vagina. The female external genitalia, collectively termed as Vulva or Pudendum which comprises of Mons Pubis, labia majora, labia minora, bartholins glands and clitoris.

In Ayurveda, wide range of terminologies are available amongst which Yoni, the most common terminology is used in this context, which indicates female reproductive system in general while uterus and its part is specific. Relating to female reproductive organ, Artavahasrota and Garbhasaya can be mentioned here. Bandhatwa, considered occurs through multiple factors with respect to male and female.

Female infertility and its incidence:

Female Infertility is an important applied aspect of reproductive system which is experienced by an estimated 48.5 million couples worldwide (WHO 2010).

According to the Indian Society of Assisted Reproduction, infertility currently affects about 10- 14 percent of the Indian population with higher rates urban areas where one out of 6 couples is impacted. Nearly 27.5 million couples actively trying to conceive suffer from infertility in India (2017). Infertility is defined as not having become pregnant after 1 year of having regular sexual intercourse without the use of birth control. If the female is older than 35 years, an evaluation and possible treatment are recommended after 6 months. If she is older than 40 years, an evaluation and possible treatment are recommended before she reach the 6-month mark (ACOG). There are multiple etiologies of female infertility viz. endometriosis, polycystic ovarian syndrome (PCOS), ovulation factors, blocked fallopian tubes, fibroids, increasing age, hormonal problems, smoking, STD, genetic abnormality etc.

Study Design-

1. Sample size (n)- Clinically diagnosed 78 cases of infertile women is studied.
 2. Inclusion criteria-
 - Infertility with both primary and secondary
 - Age group 21 years -50 years
 3. Exclusion criteria-
 - Carcinoma in reproductive organ
 - Tuberculosis in reproductive organ
 4. Investigations required for the study are
 - USG
 - Hysterosalpingography (HSG)
 - Hormonal analysis * AMH (Anti mullerian hormone)
- * FSH (Follicle stimulating hormone)

* LH (Luteinizing hormone)

* Progesterone

* Estrogen

➤ Haemoglobin (Hb%)

➤ Thyroid test

Aim:

1. Evaluation of female reproductive component in Ayurveda.
2. Applied aspect of female reproductive component is assessed emphasising female infertility.

Objectives:

1. The causes of female infertility are analysed.
2. Morphological aspects of all these causes are observed.
3. The causes are interpreted with the available Ayurvedic references.

Materials and Methods

In order to fulfil the above mentioned aims and objectives, the study has carried out in the following way-

1. **Literary Study-** The *Brihatrayee*, *Laghutrayee*, recent esteemed publication, internet database is taken as sources for the research work.
2. **Applied Study-**
 - The cause of female infertility highlighting the morphological abnormality is observed.

Results:

➤ Applied Study

I. Clinical Profile

In clinical profile, to assess the morphological involvement of Reproductive organ in female infertility, following five investigations are carried out. They are as follows-

- USG, HSG, AMH, TSH, Hb%

Table 1: Distribution of 78 cases in relation to types of Female Infertility

Sl No.	Types	No. of patients	%
1	Primary	76	97.43
2	Secondary	2	2.56

Figure 1: Shows out of 78 cases, 76 (97.43 %) are primary infertile while 2 (2.56 %) are secondary infertile.

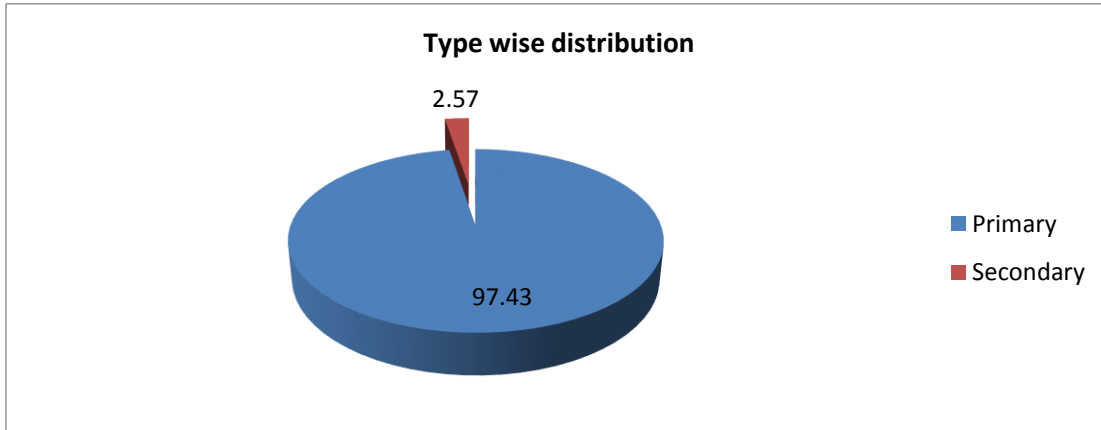


Table 2: Findings of morphological involvement in USG in relation to yoni N.B-(The term Yoni is referred to uterus, cervix and vagina)

Sl. no.	USG	No. of patients	%
1	Abnormal	47	60.26
2	Normal	31	39.74

Figure 2: Shows out of 78 cases, USG shows abnormality in 47 cases (60.26%) followed by 31 normal cases (39.74%) in relation to yoni.

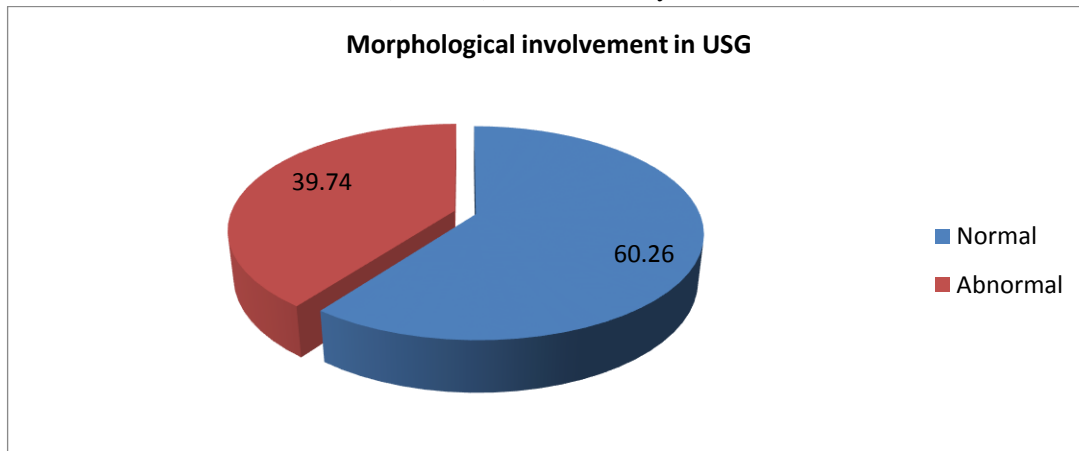


Table 2 A: Distribution of 78 infertile cases according to abnormality of different structures visible in USG (in relation to different abnormality of yoni)

Sl. No.	Different structures	No. of patients	%
1	Uterus	22	28.20
2	Ovary	23	29.48
3	Fallopian Tube	3	3.84
4	Cervix	1	1.28

Figure 2 A: Shows out of 78 cases, 23 (29.48%) cases shows maximum Ovarian abnormality, followed by 22 (28.20%) cases of Uterine abnormality, 3 cases (3.84%) of Fallopian Tube abnormality, 1 case (1.28%) of Cervical abnormality in relation to different abnormality of yoni.

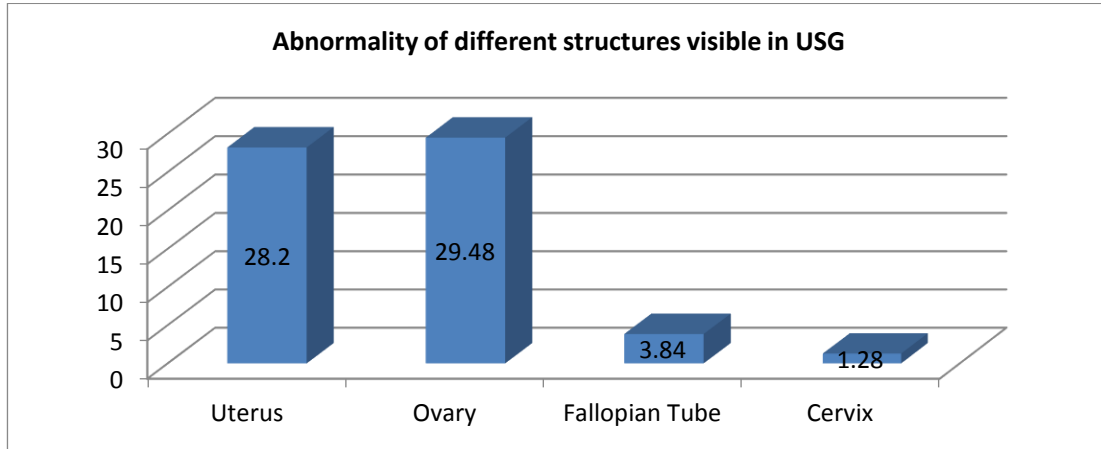


Table 3: Findings of morphological involvement in HSG in relation to fallopian tube (*artavasrota*)

Sl. no.	HSG	No. of patients	%
1	Normal	58	74.35
2	Abnormal	20	25.64

Figure 3: Shows out of 78 infertile cases, HSG shows 58 cases (74.35 %) are normal while abnormality in 20 cases (25.64%). All these abnormalities are counted in relation to morbidity of fallopian tube (*artavavahasrota*).

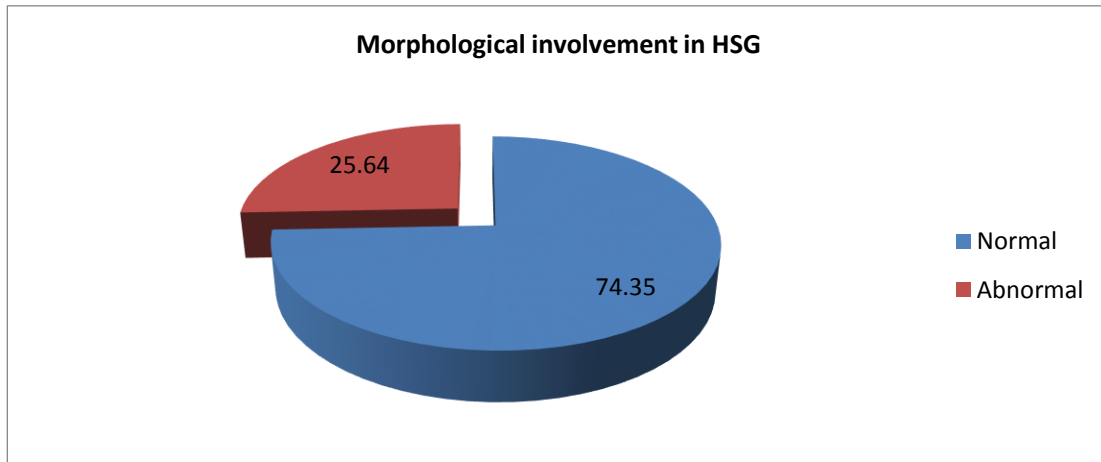


Table 3 A: Distribution of type of abnormality in fallopian tube (*artavavahasrota*) in 20 cases

Sl. No.	Abnormality	No. of patients	%
1	Absent	1	5
2	Block	Single	7
		Biletaral	12
			36.84
			63.15

Figure 3 A: Shows out of 20 cases, 19 cases (95%) show block in Fallopian tube (*artavavahasrota*) whereas 1 case (5%) shows absence of Fallopian tube (*artavavahasrota*)
 Again, out of 19 cases, 12 cases (63.15%) shows bilateral fallopian tube blockage while 7 cases (36.84%) shows single fallopian tube blockage.

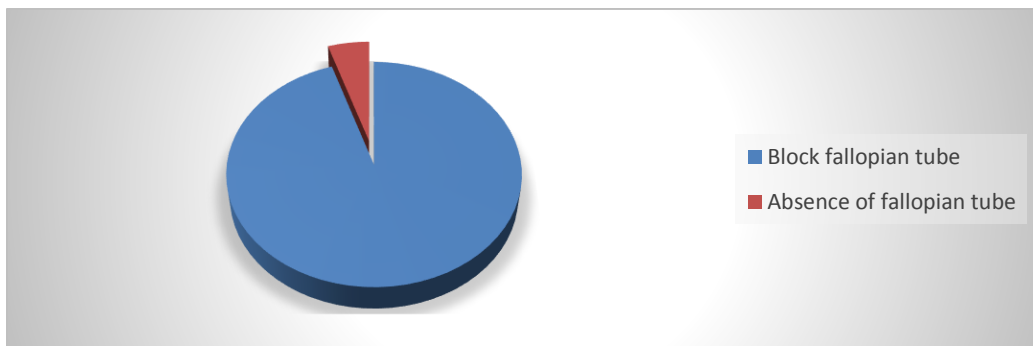


Figure 3B: Further distribution of the 19 (95%) cases of blocked fallopian tubes (*artava vaha srota*) as single and bilateral abnormalities.

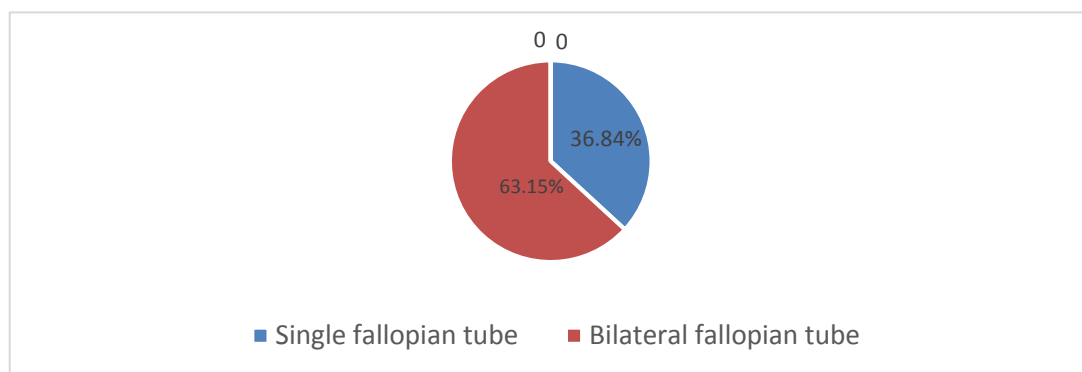


Table 4: Findings of morphological involvement in AMH in relation to *artava*

Sl. no.	AMH	No. of patients	%
1	Normal	23	29.48
2	Abnormal	55	70.51

Figure 4: Shows out of 78 infertile cases, 55 cases (70.51%) shows abnormality in AMH, while 23 cases (29.48%) shows normalcy in AMH in relation to *artava*.

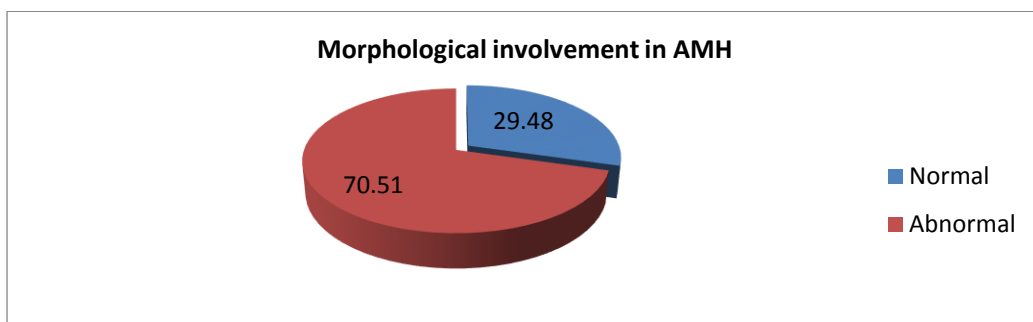


Table 4 A: Distribution of 55 abnormal cases in relation to level of AMH (in relation to *artavadushti*)

Sl. No.	Level of AMH	No. of patients	%
1	High	11	20
2	Low	44	80

Figure 4 A: shows, out of 55 infertile cases, 44 cases (80%) shows low in AMH, whereas 11 cases (20%) shows high in AMH in relation to *artavadushti*.

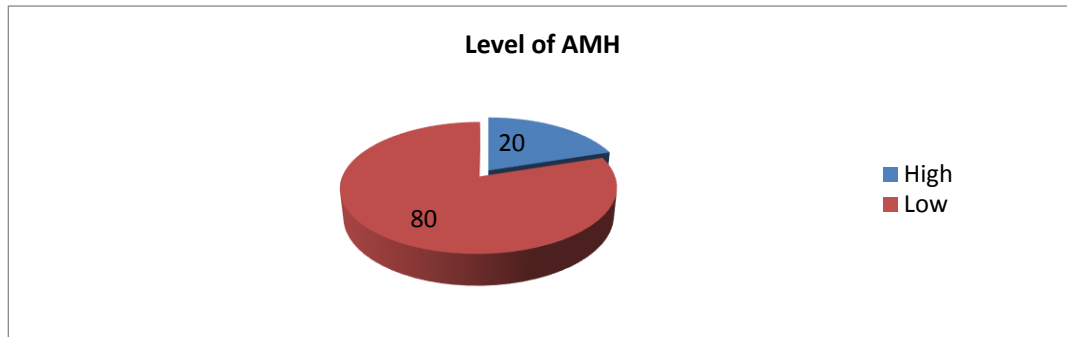


Table 5: Distribution of 78 infertile cases in relation to abnormality of haemoglobin (Hb%)

Sl. No.	Haemoglobin (Hb%)	No. of patients	%
1	Normal	39	50%
2	Abnormal	39	50%

Figure 5: Shows, out of 78 cases, 39 cases (50%) are abnormal and 39 cases (50%) are normal.

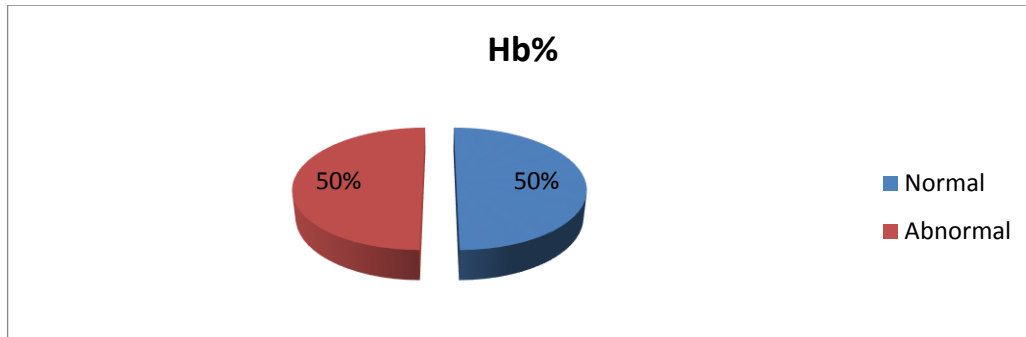
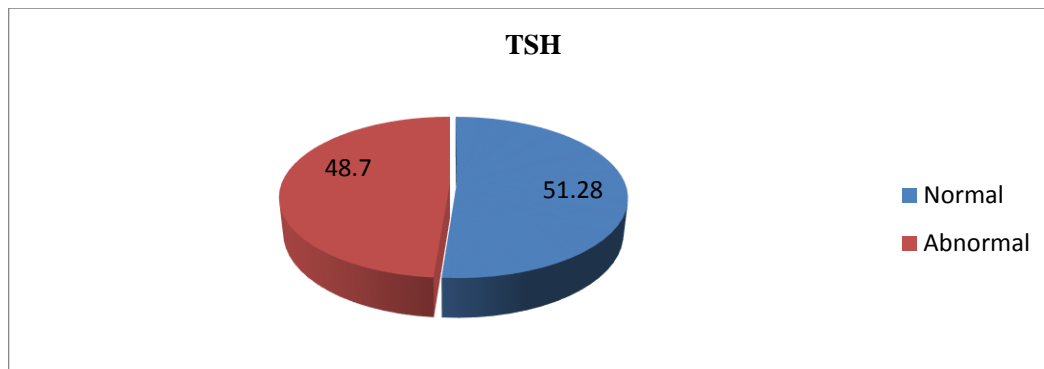


Table 6: Distribution of 78 infertile cases in relation to TSH

Sl. No.	TSH	No. of patients	%
1	Normal	40	51.28
2	Abnormal	38	48.70

Table 6: Shows out of 78 cases of infertility, 40 cases (51.28%) are normal while 38 cases (48.70%) are abnormal.

Here, all the abnormal cases are hypothyroid, or patients are suffering from hypothyroidism.



DISCUSSION

Out of 78 infertile cases, 22 cases show abnormality in uterus which is assessed through USG i.e. 28.20%. Clinically pregnancy rate, increases gradually from among patients with a lining of <9mm among patients with a lining of >16mm. This clearly highlights the concept of involvement of kshetra by Acharya Susruta which he mentioned in essential factor for embryogenesis. Charak and Bagbhat's concept of involvement of Garbhasaya for attaining fertility are also highlighted. In ASRM, endometriosis is one of the most important cause which is around 35% while ovulatory cause is followed.

Artavavaha Srota is considered as fallopian tube which play a key role in female infertility. Data shows that in 19 cases abnormality (block) of fallopian tube is found which enhances infertility in 35% of population by ASRM. The present study shows abnormality of Acharya Susruta which is accessed by HSG. Acharya Susruta opines injury to Artavavaha Srota causes Bandhwatya, Maithunasahisnuta, Artavnash.

Artava Dusti is assessed through involvement through AMH. MH is secreted through follicular atrum and its morbidity affects through ovulation.

Abnormality of ovary influences ovulation and alteration in hormones in ovary. Here, imbalance in female sex hormone are seen which may prevent release of matured egg. Data shows 5-10% of women in the age of 15-44 years suffer from PCOS. PCOS negatively impact infertility by over production of estrogen by

the ovary. It represents 80% of an ovulatory infertility case. This work observes involvement of morbidity of Artava i.e. Ovum in all these cases.

Abnormality in TSH influences infertility. Abnormal TSH secretion is associated with menstrual and ovulatory dysfunction. Hypothyroidism is known to effect pulsatile release of gnRH, which is required for cyclical release of FSH and LH and subsequent ovulation. Charak and Susruta considered 'Dirgharoginyam' i.e. prolonged suffering of disease are not suitable for conception.

Anaemia as a cause of infertility has been seen only in the cases of mal absorption syndromes. Pregnancy in a severely anaemic woman is a risk to both mother and foetus. In this present work low Hb% is found in 39 cases (50%). This gives a glimpse of deficiency of nutrition which is understood by abnormality of ahar as stressed in classics.

CONCLUSION

- In the clinical part, 78 cases are analysed for female infertility and their causes are analysed accordingly.
- Abnormality in Artava is seen through decreased AMH and presence of PCOS in patients.
- Block or absence of fallopian tube indicate Artava Vaha srota dushti.
- Garbhasaya abnormality is assessed by USG findings related to morbidity of uterus like uterine

myoma, fibroid of uterus, thick and thin endometrium and cervix.

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