

A Clinical Study to Evaluate the Combined Effect of Virechanottora Uttarabasti with Shatavari Ghrita Followed by Shatapushpa Churna in Vandhyatva W.S.R. to Low AMH

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ABSTRACT

Infertility is defined as failure to conceive within one or more years of regular unprotected coitus, essential factors are required for the fertility those are rutu kshetra ambu beeja. Among these any abnormality/disturbance in the beeja (ovum/ follicle) result into vandhyatwa (reduced AMH secretion low AMH indicates low ovarian reserve and poor quality of follicle.

low AMH indicates that there is a low ovarian reserve that means that the number of eggs in the ovaries reduced. herein this study, 30 patients with vandhyatwa w.r.s AMH were subjected to depana pachana with trikatu choorna snehapana with shatavarighrita, virechana with murchita eranda taila followed by uttarabasti with shatavari ghrita. statistically significant results were seen in both subjective and objective parameters.

KEYWORDS: vandhyatwa, infertility, AMH, virechana, uttarabasti, murchita erandataila, shatavari ghrita

How to cite this paper: M. Kavita | Rajesh Sugur | Khandade Manisha Naganath "A Clinical Study to Evaluate the Combined Effect of Virechanottora Uttarabasti with Shatavari Ghrita Followed by Shatapushpa Churna in Vandhyatva W.S.R. to Low AMH"

Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-9 | Issue-2, April 2025, pp.296-301,

www.ijtsrd.com/papers/ijtsrd76324.pdf



URL:

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INTRODUCTION

Infertility is defined as failure to conceive within one or more years of regular unprotected coitus, though it is not only a physically disabling disorder but has far reaching psychological and social consequences¹. 60 to 80 millions couples suffering from infertility every year worldwide, probably between 15 - 20 millions (25%) in India².

In women, anti-Müllerian hormone (AMH) produced by granulosa cells of ovarian follicles during the early stages of follicle development (pre-antral and early antral follicles 4 -8 mm diameter)³. AMH protein in follicular fluid increased until a follicular diameter of 8 mm, after which a sharp decline occurred. In contrast, granulosa cells of larger preovulatory follicles beyond 10 mm fail to produce AMH

Functions of AMH⁴

1. Follicular preservation by prevention of unnecessary and excessive recruitment of immature follicle (primordial follicles).
2. It prevents the maturation of follicles at the same time.
3. Folliculogenesis regulated by blocking the follicle sensitivity to FSH.
4. Indirectly helping mono follicular development.
5. AMH predict the future reproductive lifespan therefore it is considered as the best endocrine marker for assessing age related decline of ovarian pool in healthy women.

AMH as indicator of ovarian reserve and follicle growth⁴

The term 'ovarian reserve' describes the number and quality of remaining Oocyt (primordial follicles) in the ovaries. at birth around 1 million follicles present, constant loss of a fixed number of resting follicles from the original pool over time. After puberty, stimulation by cyclic gonadotropins allows the survival and continued grow.

Low AMH: there is low serum AMH, primordial follicles are recruited faster, resulting in more growing follicles until the exhaustion of primary follicle pool at younger age. indicates that there is a low ovarian reserve that means that the number of eggs in the ovaries are limited, and the chance of a mature good quality egg releasing every month and getting fertilized decreases. Also, with age, the quality of eggs gets affected.

Virechana karma is one of the prime purificatory procedures, which will act on Tridhosh. Acharya Kashyapa indicated Virechana in Agarba and Garbhakama⁵. The effect produced by Virechana can improve the quality of Beeja i.e., sperm and ovum as mentioned in Kashyapa Samhita⁶. Niruha basti plays a role in yoniprasadana and Putrada even to infertile women explained by Acharya Charaka⁷. Administration of drugs through Uttaramarga is known as Uttara Basti is used after niruha basti and superior in qualities⁸. according to Acharya Charaka Uttara Basti will do the normalization of Vayu thereby helps the women conceives⁹.

TREATMENT PROTOCOL:

VIRECHANA KARMA

First cycle: after completion of menstrual phase, patient been posted for virechana karma. Deepana Pachana with Trikatu Choorna 1 to 3gms three times a day, before food with sukhoshnaja upto nirama lakshana then Snehapana with Shatavari Ghrita in Arohana krama upto samyaka snigdha lakshana then Vishrama kala -Sarvanga Abhyanga with murchita tila taila¹³ and baspasweda Virechana karma¹⁴ with murchita eranda taila¹⁵.

Second cycle: posted for uttarabasti

Niruha basti: Niruha basti as a purva karma given before administration of Uttara basti, morning on empty stomach.

Uttara basti: After pratyagama of given Niruha basti, patient is advised to have laghu bhojana & then Uttara basti is administered in the morning

Shatavari Ghrita¹⁰ is unique combination of drugs like shatavari, goksheera and ghrita which is explained by Vangasena in the Vajikarana adhikarana indicated in sukrashodhana and artava dusti. Acharya Kashyapa mentioned that Shatavari¹¹ is having property like Pushpaprajakari, vrushya, Rasayana and Balya which may help in Vandhyatava (low AMH) in increasing AMH value. So, by all the above explanation the procedures like virechana followed by Uttara Basti with Shatavari ghrita is taken in Vandhyatva w.s.r low AMH.

Shatapushpa churna is selected as a shamana yoga, as Shatapushpa¹² is having property like Balya. Pustivardhana, Yonishukravardhini, Vataprashamani, Putraprada mentioned by acharya Kashyapa in shatapushpa shatavari kalpa. So here Agnideepana, Srothoshodhaka and Dhatuposhana line of management can be adopted

Objective of the study

- To evaluate combined effect of Virechanottara Uttara Basti with Shatavari ghrita followed by Shatapushpa churna in low AMH.

METHODOLOGY

Minimum of 30 patients with Vandhyatva (primary and secondary infertility with age between 18 to 45 years) with low AMH, with irrespective caste and religion will be selected from OPD of Taranath Government. Ayurvedic Medical College and Hospital, Ballari and by conducting special camps in an around Ballari.

“NIRUHA BASTI” AS A PURVA KARMA FOR UTTARA BASTI

BASTI MISHRANA AND PRAMANA	BASTI DRAVYA	QUANTITY
	MAKSHIKAM	48ml
	LAVANAM: Saindhava Lavana	12gm
	SNEHA: Murchita Tila Taila	96ml
	KALKA: Shatapushpa Choorna	36 gm
	KWATHA: Shatavari Kwatha	288 ml
	TOTAL	480 ml

UTTARA BASTI¹⁶.	PURVAKARMA	Niruha Basti Sthanika abhyanga to lower abdomen with Murchita tila taila and Nadi sweda with ushna jala.
	PRADHAN KARMA	Uttarabasti with Shatavari Ghrita (3-7ml) administered under aseptic measures.

Shamana yoga:

Shatapushpa Churna from 15th day of cycle to 29th day of 2nd cycle (i.e after Uttara basti procedure)

Duration: 15days

Dose: 3-6gms/day Anupana: ushnajala

Diagnostic criteria:

- Low AMH value. (Under 1.0ng/ml)
- Baseline Ultrasound

Inclusion Criteria:

- Subjects of Primary and Secondary Infertility with low AMH.
- Subjects Married with age group between 18 to 45yrs.
- Subject fit for Virechana karma and Uttara Basti.

Exclusion criteria:

- Congenital anomalies in female genital tract.
- Infertility due to Tubal factors (Both tubal block).
- Pituitary tumors.
- Patient suffering from severe infection and systemic illness
- TB Endometritis, ca cervix
- Cervical tumors and Polyps

Assessment Criteria:

The Assessment will be made based on the following subjective and objective parameters before during and after treatment.

Subjective Parameters:

- Primary or secondary infertility with low AMH

➤ Duration of Menstruation:

Grade 0- more than 3days pv bleeding

Grade 1- 2days pv bleeding

Grade 2- 1day pv bleeding

Grade 3- spotting

➤ Interval between Menstrual cycle:

Grade0 - Interval above 28 to 35 days

Grade 1- below 21 days

Grade 2 - 36 to 45days

Grade 3 - Above 45 days

Objective Parameters:

- **Decreased AMH level (< 1.5ng/ml)**

OBSERVATIONS: Distribution of subjects according to**Age group:**

In this study, maximum number 16 (53.33%) of the patients belonged to age group of 31-40 years, and 13 patients (43.33%) belonged to the age group of 20- 30years and 1 member were belonged to the age group of 41-45 years.

Type of infertility

In this study 25patients were belongs to primary infertility (83.33%) and 5 patients were secondary infertility (16.66%).

Duration of infertility

In this study 18 patients (60%) gave history of more than 2-5 years chronicity and 26.66% submitted the history of 6-10 years and (10%) of patients in 16-20years.

Anubandhi vedhana:

Maximum number ie 11(23.33%) of patients had history of scanty bleeding, 7 patients (23.33%) had history of dysmenorrhea and 4 patients (13.33%) had history of irregular menses and 2patients (6.66%) had history of dyspareunia.

Rajo vruttanta:

In this study 23 patients (76.66%) having regular cycle 7 patients (23.33%) having irregular cycle.

Coital frequency:

In this study 12 patients (40%) were having costal frequency of 2-3 times in a week, 10 patients(33.33%) having coital frequency of 3-4 times in a week and only 8 patients having coital frequency of 1-2 times in a week.

ASSESSMENT OF TOTAL EFFECT OF INTERVENTION**Effect of therapy on parameters****Duration of menstruation**

In this study 18 patients (60%) gave history of more than 2-5 years chronicity and 26.66% submitted the history of 6-10 years and (10%) of patients in 16-20years When stastically analyzed, the mean value was 1.20 before treatment reduced to 0.23 after treatment and 0.03 after follow up.the change was found to be statistically significant at the level of p-valve 0.0001. It means that, highly significant of 85.71% reduction was seen After follow-up treatment. Virechana pacify vata and kapha by correcting the srotarodha and eranda taila normalise apana vata, improves rasadhatvagni. shatavari ghrta improves follicular growth and development by folliculogenesis properties and shatapushpa by ushna veerya and Tikshna guna it clears the srotosanga and stimulates the srotas thus making the proper function of artavagni by which menstrual becomes normal in amount and normal duration.

Effect of therapy on interval between menstrual cycle

Mean value was BT- 0.77, AT -0.20,AF- 0.00 improvement in interval between menstrual cycle. The effect of therapy was significant from BT -AF with p value 0.0051.by virchana effect menstrual cycle becomes regular and after oral medication of shatapushpa choorna 5 patients got normal interval between the cycle which was more than 48days. No significant difference was observed between After treatment and After follow-up with status of interval between menstrual cycle.

Effect of therapy on AMH level:

mean value increased from 0.63 to 1.10 after treatment and 1.27 after follow up. A significant difference was observed between After treatment and After follow-up with AMH Values ($Z=3.8230$, $p=0.0001$) at 5% level of significance. Apanavayu vikruti correction and Avarodha is removed by virechana.Uttara Basti was given with shatavari Ghrta which does the sthanika Brimhana effect by doing yoniprasadana which helps in growth of follicles As it nourishes the follicles, from pre antral & antral follicles the AMH starts secreating.

Overall effect of treatment

The over outcome of treatment (over all assessment criteria) before treatment to after treatment is 76% i,e marked improvement and before treatment to after follow up is 99% i,e marked improvement observed it indicates that statistically highly significant of treatment.

RESULTS:**Comparison of before, after and after follow-up treatments with AMH Values**

Treatments	Mean	Median	IQR	% of change	Z-value	p-value
Before treatment	0.63	0.61	0.42	-73.80	4.0002	0.0001*
After treatment	1.10	1.15	0.28			
Before treatment	0.63	0.61	0.42	-100.60	4.7616	0.0001*
After follow-up	1.27	1.20	0.25			
After treatment	1.10	1.15	0.28	-15.42	3.8230	0.0001*
After follow-up	1.27	1.20	0.25			

* $p<0.05$ indicates significant

Overall changes in each parameter from before treatment to after follow-up treatment

Parameters	Changes from	% of effect
Duration of menstruation	Before to after treatment	80.56
	Before to after follow-up	97.22
Interval between menstrual cycle	Before to after treatment	73.91
	Before to after follow-up	100.00
AMH Values	Before to after treatment	73.80
	Before to after follow-up	100.60
Overall	Before to after treatment	76.090
	Before to after follow-up	99.273

OVERALL DISCUSSION

Deepana pachana is essential and first step as purvakarma before snehapana in this study trikatu used which helps for amapachana by laghu, ruksha, ushana veerya, vatakaphahara effecton rasadhatwagni.

Snehapana with shatavari ghrita in arohana krama as a purvakarma for virechana to bring doshautakleshana in the body.

Vandhyatwa is a vata dominant vyadhi and mridu samsodhana mentioned in vatadosha chikitsa. virechana is indicated in Agarba and Garbhakama. Virechana is mentioned as Yonivyapada Samanya Chikitsa Siddhanta.

Virechana Karma with eranda taila which expels out the accumulated vitiated doshas, cleanses the body, regulating the menstrual cycle, improving the health of reproductive cells and enhancing hormonal balance, then artava and garbhashaya shuddhi vata anulomana karma of virechana which initiates the proper function of vitiated apana vayu and yoni vishodhana (cleanses the yonimarga), agnivardhana particularly dhatwagni which controls hormones and by virechana all the dhatus become stable and normalizes the Jatharagni and Dhatvagni thereby helping in proper production of Rasa Dhatu and Artava Dhatu which responsible for proper growth and development of follicle there by it overcomes vandhyatwa. Virechana is also have effect on mental health (manah Shuddhi), helping to alleviate stress and anxiety are the cuases for low AMH

- Uttara basti will normalizes the function of apana vayu and prepare kshetra for Garbha dharana. sthanika abhyanga and Nadi sveda is to be given to the lower abdomen, thighs and yoni Pradesha prior to Utttar Basti make the Anulomana. does Mruduta (relaxation) to reproductive system, so the patient does not suffer from discomfort or pain during and after procedure.
- shatavari Ghrita having the Sheeta veerya, Madhura rasa as these do Brimhana effect. Sharavari ghrita contains goghrita goksheera and

shatavari. by uttarabasti proceduredrugs reach to the target organ and absorbed by reproductive organs and cause the local uterine contractions and further stimulate the receptors and regulate the H-P-O axis. So Follicle development occurs due to the shatavari ghrita, as it is having folliculogenesis property. It helps for granulosa cells multiplication and increase the size of follicle. Shatapushpa acts on apana vayu and normalize the pathology and helps to increase the size of follicle there by increased secretion of AMH from the antral follicle.

As per Modern view, Shatavari and Shatapushpa are having phytoestrogenic property.

Phytoestrogen have ability to affect the endogenous production of estrogen. The pituitary gland releases gonadotrophins that stimulate estrogen synthesis in the ovaries and effective by regulating the GnRH pulsatile release, normalize by hypothalamus pituitary-ovarian axis, corrects hormones, Follicle development (increasing the size of follicles) and secretion of AMH from pre antral and antral follicles.

CONCLUSION

- Acharya sushruta mentioned that, to achieve conception 4 essential factors are required those are rutu kshetra ambu beeja. Among these any abnormality/disturbance in the beeja (ovum/ follicle) result into abeejotsarga (reduced AMH secretion low AMH indicates low ovarian reserve and poor quality of ovum/follicle. low AMH indicates that there is a low ovarian reserve that means that the number of eggs in the ovaries reduced.
- Vitiated Vata and Kapha both are mainly responsible for avrana that leads to Artava dusti and Abeejotsarga. In this present study women suffering from infertility due to issues in beeja(ovum) can be considered under Beeja Dushti.
- Virechana karma adopted here for shodhana purpose which relieves the avarana and does the beeja Shuddhi.. Basti may remove avarana kapha

and might have restored the normal function of vata and regulates functioning of pelvic organs, maintain follicular growth and development.

- Uttara Basti with shatavari ghrita acts as sthanika chikitsa by doing Brimhana.it stimulates endometrial receptors then stimulation of h-p-o axis to restore the physiological folliculogenesis by correcting artava dusti. Shatapushpa choorna to corrects Apana vayu vitiation and removing obstruction, thus help in Samprapthi Vighatana of Vandhyatva.
- In the present research work on the basis of facts, observation and result of drug and clinical studies can concluded that virechanottara uttarabasti with shatavari ghrita followed by shatapushpa choorna orally effective in the management of low AMH.

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