

AN AYURVEDIC APPROACH IN TREATMENT OF LOW LEVEL OF ANTI MULLERIAN HORMONE (AMH) - A CASE REPORT

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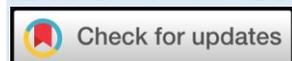
<https://doi.org/10.46607/iamj16p5022021>

(Published online: January 2021)

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Article Received:06/02/2021 - Peer Reviewed:07/02/2021 - Accepted for Publication:08/02/2021



ABSTRACT

The anti-mullarian Hormone (AMH) is secreted in women exclusively by the granulosa cells of the ovarian follicles which begins at puberty and lasts till menopause. Serum level of AMH is a precise marker of follicle pool size. It is used in assisted reproductive technology in order to evaluate the ovarian stimulation protocols and a part of infertility assessment investigation. The signs and symptoms of the patient with reduced AMH levels can be understood as *Artavadusti* in *Ayurveda*. In the present case, report of the patient shows low level of AMH and marked reduction in size of ovaries leading to decreased ovarian reserve. Therefore, patient consulted for effective *Ayurvedic* intervention and patient was subjected to a course of *Shodana* treatment for 15days, followed by *Shamana* treatment. After Ayurvedic intervention there is marked increase in AMH level was seen. Thus, makes her eligible for conception.

Keywords: Anti mullerian hormone, assistant reproductive technology, Ayurveda, case report, Shodhana, shaman treatment

INTRODUCTION

Conception depends upon combined excellence for fertility in both male and female partner in which female is directly responsible in about 40-55% of infertility⁽¹⁾. In Ayurveda classics, the four factors which helps in conception are *Rithu*, *Kshetra*, *Ambu* and *Beeja* they are termed as *Garbhasambhavasamagri*⁽²⁾ *Beeja* refers to healthy ovum in females which is the major criteria for conception. The 'ovarian reserve' comprises two elements: the size of stock of primordial follicles and the quality of the remaining oocyte in the ovaries. From the primordial follicle pool, primary follicles will start maturation process and develop as a secondary (preantral) follicles in the pool of antral, from which the monthly follicle to be ovulated is selected by AMH. Protein expression in human ovary is also seen in granulosa Cells of follicles, from the primary stage up to the larger antral stage, when follicles have gained FSH dependence. Since the size of the primordial follicle stock is difficult to measure directly, a marker that reflects all the numbers of follicle that have made transition from the primordial follicle pool to the growing pool may be a good indirect measurement. AMH levels helps in prediction of future reproductive lifespan, hence it is considered as the best endocrine marker for assessment of age-related decline of ovarian reserve in a healthy woman⁽³⁾.

The female patient aged 38yrs who already diagnosed with low levels of AMH and reduced ovarian reserve, approached SDM OPD for effective Ayurveda treatment. The Patient was treated on the basis of *Artavadusti* caused due to *nidanasevana* leading to *vataprakopa* affecting the *Garbhashaya* (whole of the reproductive system) causing a reduction in ovarian reserve and hence leading to low levels of AMH. Ayurvedic intervention helps in improving the AMH levels to a satisfactory level and thus helps in achieving conception.

Case Report – Patient Information

The patient 38-year old married, non-alcoholic, non-smoking female who is a lecturer by profession with primary infertility since 2yrs. She had previously consulted infertility centres and was advised to plan for

ART (in-vitro fertilization). She had undergone various investigations including hormonal assays, ultrasound scanning, and then was diagnosed to have low level of Anti-mullerian hormone. For the same she had underwent treatment in contemporary system, but there is no satisfactory result, detail of which not available hence she approached the Outpatient department of Prasuti Tantra Streeroga, SDM hospital Hassan for further management

Clinical findings-

On interrogation she had associated complaints of drastic reduction of menstrual flow since 1yr and increased weight (around 5kgs) since 8months. She had non consanguineous marriage 2yrs ago, all parameters of husband were found to be healthy. Family history was negative for low AMH levels. She usually prefers vegetarian diet with normal appetite, *Sama Agni*, *madhyamakoshta*, *withprakritanidra*, *regulr bowel and maturation habits*, she had no alcohol/tobacco addiction. Her nature of work was hard manual standing most of the time and was stressed with the work schedule. In 2008 she had few skin disorders and had underwent *Shodanatherapy (Virechana)*. She was psychologically depressed regarding conception and was irritable various times.

She attained menarche at the age of 13 and had regular menstrual cycles lasting for 4-5 days with an interval of 28 days cycle; there was no pain, no clots and no foul smell during menstrual cycle. Since 1yr pt is having menstrual cycle lasting for 2 days with an interval of 28-30 days, with dysmenorrhoea, uses 2 pads/day and clots are found on day 1, no foul smell, no white discharge per vagina during intermenstrual period, and no other associated complaints. Coital history revealed burning sensation after coital act and loss of libido.

In general examination blood pressure, pulse rate and respiratory rate were normal (Bp-110/80 mm of hg PR-78 bpm, RR-22 rpm afebrile). General built was normal with height proportional to weight, well nourished, cyanosis, pallor, icterus were absent, *Astasthan Pareeksha* and *Dashavidha Pareeksha* revealed with *Shareerika Prakriti Dwandwaja*, *Pitta Kaphaja Prakriti*, *Vataditridosha* being the *Vikrutitadosha* and *Ra-*

sa Raktadi as Vikrutita Dhatus, Twaksarapurusha, Susamhita, Supramanita (height proportional to weight) Sarva Rasa Satmya, Rukshasatmya, Avarasatva, Madhyamaabhyavaharanashakti, and Pravarajanashakti, Pravaravyayaamashakti (does daily 1hr of workouts and walking at home) Madhyamavayah.

Diagnostic Assessment (Nidanapanchakas)

Nidana-

- Ahara-rukshapradhanavatavrudhikaraaharasevana
- Vihara- Vatavrudhikaravihara
- Manasika—stress related to late marriage conception and work-related stress
- Advanced age group

Purvarupa—

- Alasya

- Guru gatratva (increased weight)
- KsheenaArtava⁽⁵⁾

Rupa—

- Arthavadushti
- Low levels of AMH
- Marked decreased in the size of ovaries/decreased ovarian reserve

Sampraptighataka-

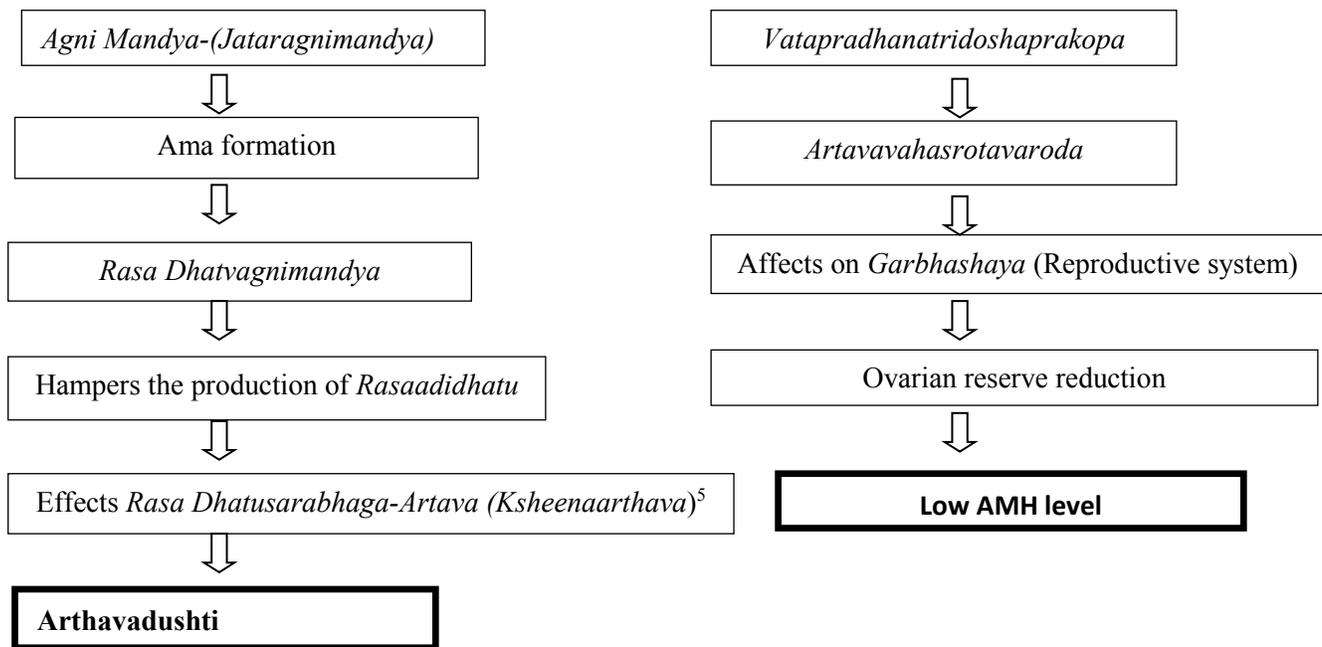
Dosha—VataPradhana Tridosha

Dushya- Rasaraktaadi, Shukra (Vandyatwa)

Srotas involved- Artavavahasrotas, Shukravahasrotas

Srotodusti- Vimarga Gamana

Nidanasevana (Aharaja, Viharaja, Manasika, Advanced Age)



Investigations- HbA1c was found to be 4.8%, PAP cytology was done and tested to be negative for intraepithelial lesion or malignancy.

Pt went for consultation and the AMH levels were 0.64ng/dl and were diagnosed with low AMH level.

Name: MRS LATHA H D (A23439)
Age: 38 Year(s) **Gender:** F **Contact No.:** 0
UID: **Referring Dr.:** DR SHIVA KUMAR

Registered: 14/05/2020 14:20
Reported: 14/05/2020 17:17
Report Status: Final

HIGHER CHEMISTRY

Test Name	Test Result	Biological Reference Range	Sample
ANTI MULLERIAN HORMONE - Immunoenzymatic ("Sandwich") assay - Chemiluminescence	0.64 ng/ml	0.03 - 7.15 Interpretation (AMH Levels -Women under 35) High (Often PCOS) : Over 4.0 Normal : 1.5 - 4.0 Low Normal Range: 1.0 - 1.5 Low : 0.5 - 1.0 Very Low : Less than 0.5 ng/ml	SER
Immunoenzymatic (Sandwich) Assay			

----- End of HIGHER CHEMISTRY Report -----

Customer Name	MRS LATHA H D	Customer ID	IND572493
Age & Gender	37Y/FEMALE	Visit Date	30/11/2019
Ref Do/Cor	DR. SUHASINI INAMDAR		

CLUMAX
DIAGNOSTICS

ABDOMINO-PELVIC ULTRASONOGRAPHY

LIVER shows normal in shape, size and has uniform echopattern. No evidence of focal lesion or intrahepatic biliary ductal dilatation. Hepatic and portal vein radicals are normal.

GALL BLADDER shows normal shape and has clear contents. Gall bladder wall is of normal thickness. CBD is of normal calibre.

PANCREAS has normal shape, size and uniform echopattern. No evidence of ductal dilatation or calcification.

SPLEEN shows normal shape, size and echopattern. Spleen measures - cms in long axis and -cms in short axis. No demonstrable Para-aortic lymphadenopathy.

KIDNEYS move well with respiration and have normal shape, size and echopattern. Cortico-medullary differentiations are well made out. No evidence of calculus or hydronephrosis. The kidney measures as follows:

	Bipolar length (cms)	Parenchymal thickness (cms)
Right Kidney	10.6	1.4
Left Kidney	10.3	1.5

URINARY BLADDER shows normal shape and wall thickness. It has clear contents. No evidence of diverticula.

UTERUS is anteverted and normal in size. Posterior subserosal fibroid measuring about 2.9 x 2.1 cms is seen in the mid uterine segment. Endometrial thickness measures 4mm. Uterus measures as follows: LS: 9.4cms AP: 3.7cms TS: 5.3cms.

OVARIES are normal in size, shape and echotexture. No focal lesion seen. Ovaries measure as follows: Right ovary: 3.2 x 1.1cms Left ovary: 2.8 x 1.2cms

POD & adnexae are free.

No evidence of ascites/pleural effusion.

IMPRESSION:

> UTERINE FIBROID.
 > NO OTHER SIGNIFICANT ABNORMALITY DETECTED.

CONSULTANT RADIOLOGISTS
 DR. H.K. ANAND DR. NANDA KUMAR, K DR. CHANDRAMOULY, M

DR. APARNA

Name of the treatment	Duration	Kalpana used
Deepanapachana + Sarvanga Udwartana (21-04-2020 to 25-04-2020)	5days	Internally- 1. T. Chitrakadivati 1TID BF 2. T. Agnitundivati 1TID AF
Arohana Karma Snehapana(25-04-2020 to 30-04-2020)	5days	Kalyanak Ghrutha ⁽⁸⁾
Sarvanga Abhyanga(1-05-2020 to 2-05-2020)	2days	Bruhat Saindhavaadi Taila
Virechanakrama(3-05-2020)	1day	Trivrutlehya(80gms)

Therapeutic intervention - Shamanachikitsa

Name of the medicine	Duration(15days -3-05-2020 to 18-05-2020)	Anupana/Sahapana
1) Kumaryasava + 2) Ashokarishta ⁽⁹⁾	3tsp-3tsp-3tsp + 3tsp-3tsp-3tsp before food	With 6tsp lukewarm water
3) Jeevani Syrup	1tsp-1tsp-1tsp After food	

Follow-up and outcomes

After the course of *Shodhana Samsarjana Karma* advice for 7 days and *Shamana* treatment for 1 month follow up next menses. The following results were found when she came for follow up.

Subjective findings –Lightness of the body, Regular menstrual cycles with reduced pain during menses. Decreased body weight -5kgs

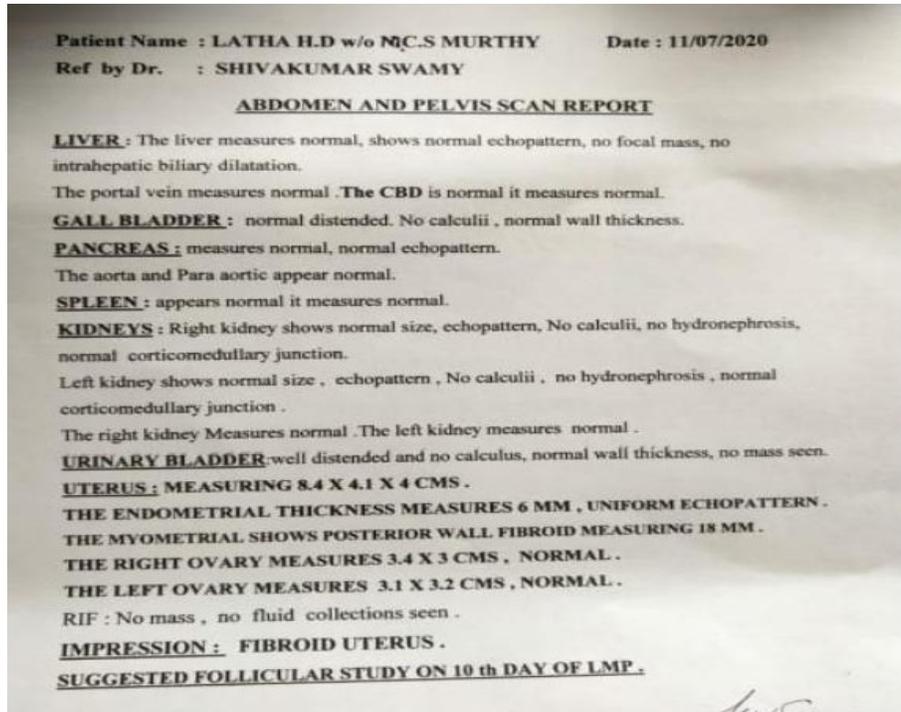
Objective findings–Reports suggests of increased AMH levels, USG- increase in the size of ovaries

DISCUSSION

Conception is combined effect of *Rutu*, *Kshetra*, *Am-bubeeja* termed as *Garbhasambhavasamagri*⁽³⁾. Here Beeja is related to healthy ovum in females which is the major criteria for conception. *Beeja Sampat* is directly depend on the qualitative and quantitative assessment of the ovary and AMH. These are the indicators of conception and low AMH levels suggests for poor conception⁽²⁾.

In this present case patient came with reports of low AMH levels and marked reduction in size of ovaries

Name: MRS LATHA H D (A27390)		Registered: 20/06/2020 12:24	
Age: 38 Year(s)	Gender: F	Contact No.: 09513355969	Reported: 20/06/2020 15:13
UID:	Referring Dr.: DR shiva kumar swamy		Report Status: Final
HIGHER CHEMISTRY			
Test Name	Test Result	Biological Reference Range	Sample
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Immunoenzymatic (Sandwich) Assay			
----- End of HIGHER CHEMISTRY Report -----			



Due to *Nidanassevana* (*Aharaja, Viharaja, Manasika*, advanced age) she had *Sarvadaihkavataprapakopa* effecting the *Garbhashaya* (whole of the reproductive system) leading to reduced ovarian reserve and low amh levels. She also had irregular menses with drastic reduction of menstrual flow and increased weight gain since 1yr suggestive of *Arthavadusti*⁽⁵⁾ caused due to *rasa Dhatvagni Mandya*.

Hence she was subjected to *Deepanapachana* and *Sarvanga Udwartana* for 5days which helps in *srotoshodana* and *amapachana*, for *Deepanapachana* she was advised with *T.chittrakadivati* (1Tid before food) and *T.agnitundivati* (1Tid after food)

Sarvanga Udwartana helps in reducing body weight and as well as *Amapachana*. *Arohana Krama Snehapana* was given for 5days with *Kalyanakagh-rutha*⁽⁸⁾. It is *Madhura Rasa and Sheeta Guna Pradhana*, indicated in *Vandyatwa*, it helps to enhance the *Rasa Dhatu* in the body and simultaneously leads to formation of *Upadhatu Roopi Artava Vrudh* leading to increase in the levels of AMH and raise the ovarian reserve. Later she was subjected to *Sarvanga Abhyanga* for 2 days with *Bruhatsaindhavaadi Taila*

which helps in *Medosrotoshodhana* and *Kaphavilayana*.

Shodana -Virechana was given with *Trivrutlehya* 80gms by assessing the *Koshta*, as mentioned by *Kashyapa*. *Virechana* helps to enhance the *Karmukata of the Beeja(ovum)*. There was *Madhyamashudhi* with *Virechana* Vegas of 16 times. *Samsarjanakrama* was followed for 5days later she was advised to have oral medications. *Kumaryasava* 3tsp Tid with *Ashokarishta*⁽⁹⁾ 3tsp Tid before food, *Jeevani* syrup (3tsp Tid after food) was advised. It is indicated in *Arthavadusti* and *Yonirogadhikara*, it is *Madhuraprayasheetaveerya*. Both acts as *Arthavajanaka, Garbhashaya Shodhakaraka and Garbhashaya Balya Karaka*. Treatment was continued and follow up was done when she got her menses. She felt better with the treatment, notable chances in the symptoms of *arthavakshaya* (irregular and reduced menstrual flow) loss of weight (5kgs), lightness of the body, reduced pain during menses, reduced pain in lower limbs were found. She was subjected for investigations. There was an increase in the AMH levels from 0.64ng/ml to 1.17ng/ml. There is an increase in size of ovaries (right ovaries- 3.2 x 1.1 cms, left ovaries- 2.8 x 1.2cm) to

(right ovaries-3.4 x3cms, left ovaries-3.1 x 3.2cms). This case represents *Vatadosha Vikriti* there by affecting the *Garbhashaya* and the *Arthav Aupadhatu* which was evident from the *Arthava Kshaya Lakshanas*⁽⁵⁾ of the patient. The treatment rationale aims at correcting the *Agni* at the level of *Jataragni* and *Dhatus* and *Shamana* of *Vatadosha*, creating an equilibrium state of *Dosha* and *Dhatu*.

CONCLUSION

Ayurveda is a promising medical science which helps to give best result when the contemporary medical science cannot give proper answer to various parameters affecting infertility. As per the contemporary medicine there is no treatment to increase AMH level, so Ayurveda have significant line of treatment to treat this condition Ayurvedic intervention, like *Shodana* and *Shamana* treatments were helpful in improving the AMH value to a satisfactory level. Thus, helps in natural conception.

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Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Shivakumara Swamy P et al: An Ayurvedic Approach In Treatment Of Low Level Of Anti Mullerian Hormone (AMH) - A Case Report. *International Ayurvedic Medical Journal* {online} 2021 {cited January, 2021} Available from: http://www.iamj.in/posts/images/upload/2756_2762.pdf