

Randomized Clinical Endpoint Study to Assess the Effect of Hingu Churna in Stree Pushpa Janana W.S.R. to Ovarian Follicle Development: A case Study

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Introduction

According to world health organization around 60 to 80 million couples suffer from infertility¹. This constitutes that 8 to 12 percent of couples suffer from infertility¹. This is a very huge number. If prevalence of infertility in India is considered, according to national health portal, a government of India initiative, it is supposed to be between 3.9 percent to 16.8 percent². In Maharashtra figure is estimated to be 3.6 percent². In women problems of anovulation are supposed to constitute 30% to causes of infertility³. Ovulation per say is very important psychological, physical, and social health of women. In chronic anovulatory women depression and other psychological problems are more prevalent than normal women. Breast cancer, endometrial cancer, endometriosis, and cardiothoracic problems are more frequent in anovulatory women than normal women⁴. Infertility is a social stigma in our country, thereby hampering social health of women. In united states of America in 2008, there were 90000 assisted ovulations and in 2014 figure rose to 1901934. But ovum in this assisted ovulation is found to have more genetic problems and children born of assisted reproduction are premature and with other genetic and physical diseases. Also, these medicines and assisted reproductive techniques are costly and require constant medical attention.

In allopathy various drugs such as Clomiphene Citrate, Tamoxiphene, Lestrozole are used for ovulation to occur, but there is limitation on their usage regarding long term use and serious

side effects of these drugs. In our country, where 34% of population is lying below poverty line, a major chunk of general population suffering from infertility is less likely to afford very high costs of assisted reproductive therapy, the cost of which in 2019 goes beyond rupees 1,50,000 i.e. rupees one lakh and fifty thousand only. So, it is of paramount importance to find a way out, which is safe, cheap and treatment that can be taken over a long term without much medical supervision. This is where Hingu churna comes in to help us.

According to Acharya Sushruta (Bhanumati Tika), Artava means Stree Beeja⁵.

Aim

To study the role of Hingu in Stree Pushpa Janan in patients with anovulatory cycles

रक्तलक्षणमार्तवं गर्भकृत च । (सु. सू. १५/९)६

.....आर्तवमाग्नेयम्....॥ (सु. शा. ३/३)७

In all these references the word 'Artava' implies 'Streebeeja' i.e. ovum, as they justify the meaning of ovum as Streebeeja^{6,7}. In Sushruta Samhita, sharirshatana 9/6 'Artava' can be correlated with ovum and its Abhivahana can be taken as transport of ovum after ovulation through fallopian tube.

पुष्पभूतं हि तद्देवान्..... । (का.सं.खिल.९/१७)८

ततः पुष्पदर्शने.....। (अ. सं. शा. १/४४)९

Acharya Kashyapa and Vagbhata have mentioned 'Antahapushpa' for ovum^{8,9}.

Vishvamitra has clarified that hairy thin vessels fill the uterus for whole month to receive Beeja and due to Rasadushti Poshanatmaka Dushti can cause Abeejotsarga.

**मुक्कमकेशप्रतीकाशा बीजरक्तवहाः सिराः ।
गर्भाशयं तर्पयन्ति मासाद्बिजाय कल्पते ॥
(विश्वामित्र)**

In Sutrasthana Aadhya 15, Acharya Sushruta stated Agneya gunatmak dravya are used in treatment of Artavashaya¹⁰. Acharya Charaka has stated that agneyagnatmak dravya attributes to Ushna, Tikshna and Laghu gunakarma. Hingu is Ushna, Tikshna and Laghu in Gunakarma¹². Hingu niryas churana is the one of content which is used in preparation of Rajapravartini vati in equal quantity¹³. Rajapravartini vati is referred in Artavashaya, Rajorodha, Sakashta Raja strava¹³ etc.

Hingu niryas churna can regularize follicular development and thus have effect on ovulation and fertility. Hingu niryas churna is easily available and can be prepared easily in every household and can be taken over a long term without much medical attention and is very cost effective as well. This thesis with this study aims to ascertain effect of Hingu niryas churna on ovarian follicular development and thereby on ovulation as well as effect on endometrium. Once the role of Hingu niryas churna is verified according to Acharya Sushruta and Bhavaprakash^{5,10,11}, we feel it can serve lot of women with respect to their physical, mental and social health and save family from economic burden of treatment. Considering all above arguments in detail, we feel this study can provide a simple and useful solution to this grave problem and hence we propose this study.

Study Rational:

According to Acharya Sushruta (Bhanumati Tika), Artava means Stree Beeja⁵.

In all these references the word 'Aartava' implies 'Streebeeja' i.e. ovum, as they justify the meaning of ovum as Streebeeja^{6,7}. In Sushrut Samhita, sharirshatana 9/6 'Aartava' can be correlated with ovum and its Abhivahana can be taken as transport of ovum after ovulation through fallopian tube.

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treatment of Artavashaya¹⁰. Acharya Charaka has stated that agneyagnatmak dravya attributes to Ushna, Tikshna and Laghu gunakarma. Hingu is Ushna, Tikshna and Laghu in Gunakarma¹². Hingu is the one of content which is used in preparation of Rajapravartini vati in equal quantity¹³. Rajapravartini vati is referred in Artavashaya, Rajorodha, Sakashta Raja strava¹³ etc. Hingu niryas churn helps for ovarian follicular development and endometrium formation ^{5,10}. It would result in good follicular development and ovulation and thus fertility.

According to Pilot Study done by Fatemeh Ghavi et al, the results of this study showed that Ferula assa-foetida exhibited effects on decrease of ovarian volumes and the number of ovarian follicles in women with PCOS after three months intervention¹⁵.

A lot of research has been done for the treatment of Anovulation by using Rason, satapushpa, palasha Shara, Palashabhasma, Shatavari, Kanchanar Guggule, rajapravartini Vati, Varunadi Kwatah etc, but very limited study has been found for use of Hingu for Ovarian Follicle Development. So, I selected Hingu Niryas Churna for my research.

Materials and methods

This is a observational study. For this detailed literature for Hingu from various ayurvedic manuscripts was studied. After that Hingu was procured from local pharmacy. Hingu was then purified, quantified and converted in churna and converted in dosages of 500 mg each, for to be provided to the patient. For this following ayurvedic manuscripts were studied [6-12].

1. Bhavaprakash Nighantu, Pratham Bhaga, Edited by Sri Brahmasankara Misra and Sri Rupalalaji vaisya, Chaukhambha Sanskrit Bhavan, Edition-2012.
2. Rasatarangini, Editor by Kashinathashastrina, 12th sankaran 1979, Punarmudran last 2000.
3. Kashyapa Samhita, Revati Kalpadhya 6, Kalpasthana.
4. Charaka Samhita Chikitsasthan Adhyay 30, Sutrastana Adhyay 27.
5. Susruta Samhita Sutrastana Adhyay 38.

6. Sartha Vagbhata Sutrastana Adhyay 6.
7. Dravyaguna Vidnyan by Acharya Priyavat Sharma Part 2.

Hingu churna was prepared according to standard ayurvedic texts. For this Rasatarangini by Sadanand Sharma, was used [14].

हिङ्गुशोधनम्

रामठं समशुद्धाज्यसयुतं दर्विकागतम् ।

विकपमग्नितापेन शुद्धिमायात्यनुत्तमाम् ॥

(रसतरंगिणी २४/५७८) [14]

Particles of raw hingu with equal quantity of cow Ghrita were mixed in an iron spoon. This was then heated on medium intensity flame till the particles of Hingu popped up on ghrita surface and remained afloat there. At this point hingu was separated from cow grita and dried.

अत्यंतकशुष्कं यदद्रव्यं सुपिष्टं वस्त्र गालितम् ।

तत्स्याच्चूर्णं रजः क्षौद तन्मात्रा कोलसम्मिता ॥

-शा.सं.म.खं.६/१[15]

Dose of hingu churna was 500 mg twice a day prepared according to Sharangdhar Samhita, madhyam khanda, adhyay sixtht, shlok number 1.

लिहेच्चूर्णं द्रवैः सर्वघृत आददैर्विगुणोन्मितैः ।

पिबेच्चतुर्गुणैरेव चूर्णं मालोडितं द्रवैः ॥ -

शा.सं.म.खं.६/२[16]

Hingu churna was given with anupan shoudhra, according to the verse mentioned above. 500mg of Hingu churna was mixed with equal quantity of Gogrita and consumed twice a day after meals, from 3rd day to next the menstrual cycle. The treatment was carried out for three cycles.

Patient was followed on alternate day. Patients follicular size was calculated, and end point was follicular rupture with fluid in POD. Also, duration of the menstrual cycle and bleeding days along with amount of bleeding per cycle was calculated.

Patient included in study was 21-year-old female, with history of irregular menstrual cycle, infertility, PCOS and anovulatory cycle. No other

factors having infertility or endometrial and ovarian dysfunction were noted.

Results

After consuming Hingu churn improvement was seen in all the parameters of ovulation. Bleeding days

Cycle	Number of days of bleeding
2	4
3	4
4	5

Amount of bleeding

Cycle	Amount of bleeding
1	Moderate, painless
2	Moderate, painless
3	Moderate, painless

Ovulation

Cycle	Ovulation day
1	14
2	14
3	15

Follicular size growth

Day	Cycle 1 cm	Cycle 2 cm	Cycle 3 cm
3	6*8	5*7	6*6
5	8*8	8*10	9*9
7	10*12	11*13	12*14
9	12*14	13*15	13*15
11	14*16	15*18	15*16
13	18*20	17*19	18*18
15	dehiscence	dehiscence	dehiscence

Discussion

After consuming Hingu churn 500mg every day in morning with equal amount of gogrita, improvement in all the parameters of ovulation was seen. First parameter that was studied was number of days of bleeding. Patient

had variable days of bleeding before consuming churna.

Bleeding lasted anywhere from 6 days to 9 days. After consuming the Hingu churna, cycle duration was reduced to four to five days. Next parameter that was studied was amount of bleeding and pain associated with the bleeding. After consuming Hingu churna regularly the bleeding became relatively painless, and bleeding became regular and moderate. Next parameter that was studied was progression in the size of the follicle. Before using Hingu, patients' growth of follicle was slow, achieving size of 18 mm on 20th, 22nd or 23rd day, sometimes ovulation did not occur. But after using Hingu churn the size of 18*18 mm was consistently achieved on 14th or the 15th day. The growth of the follicle was smooth and follicular rupture was achieved in all the cycles and consistently on 14th or 15th day. Hingu Churna also improves digestion of i.e. acts as deepan pachan which improves rasa dhatu which is ultimately improves Artava i.e. stree beeja.

Conclusion

Hingu churn when consumed regularly in doses of 500mg per twice a day improves all parameters of ovarian follicular growth and rupture and achieves follicular rupture consistently in all the cycles. It thus is useful in anovulatory infertility, PCOD and all other ovarian disorders that involve anovulation. Due to deepan pachan gunakarma of hingu improves digestion which acts on rasa dhatu which is ultimately improves Artava i.e. stree beeja.

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