



ORIGINAL RESEARCH PAPER

Ayurveda

EFFECT OF CHITRAKAGRANHYADI KASHAYAM WITH NAVAKA GUGGULU IN POLYCYSTIC OVARIAN SYNDROME

KEY WORDS: Polycystic ovarian syndrome, Chitrakagrandyadikashayam, Navakaguggulu

Aswathy Bharathan

PG Scholar, Dept of Prasuthitantra and Streeroga, Govt Ayurveda College, Thiruvanamthapuram

S. T. Asha*

Associate professor, Dept of Prasuthitantra and Streeroga, Govt Ayurveda College, Thiruvanamthapuram*Corresponding Author

ABSTRACT

Introduction:PCOS is one of the conditions affecting this unique capacity of woman. It is a heterogeneous disorder characterized by menstrual irregularities, clinical and or biochemical hyperandrogenism and hyperinsulinemia, which ultimately leads to infertility. PCOS is kaphavatha predominant disease cause due to agnimandhya, ama and srotovaigunya. The treatment is kaphavatahara and pithavardhaka along with the avoiding the causative factors. By considering the above facts ChitrakagrandyadiKashayam which is kaphavatahara, lekhana and deepana and Navakaguggulu which is kaphavatahara and medoharawere selected for the study.

Objectives of the study: To assess the effect of chitrakagrandyadikashayam with Navakaguggulu in Polycystic ovarian syndrome.

Materials and Methods:Single group, Pre and post interventional study.Females of the age limit 18-34 yrs. who are diagnosed as Polycystic Ovarian Syndrome as per Rotterdam Criteria were selected.The study drug was given for a period of 3 months continuously excluding the first three days of each menstrual cycle. Following this, next 3 months were considered as follow up period and the clinical changes in the patient were assessed carefully.

Results and interpretation: The combination of above drugs were expedient in normalizing menstrual interval, reducing the volume of ovaries and reducing the BMI.

INTRODUCTION

Since the evolution of the life in universe, women have been placed on extreme worshipping place due to her power of "Janani" (Capability of creation and care of new offspring of human beings).The references of this unique feature of women are also categorically praised in most ancient authentic literature of the globe i.e. Vedic literature, Acharya Manu has stated that, "prajananartham streeyah srushtha" (Manusmriti). PCOS is one of the conditions affecting this unique capacity of woman. Poly Cystic Ovarian Syndrome (PCOS) is one of the most common metabolic and reproductive disorders among women of reproductive age. Although it is quite commonly encountered in clinical practice, its prevalence varies considerably depending on how its diagnosis is made, because of the heterogeneity in its presentation. It is a heterogeneous disorder characterized by menstrual irregularities, clinical and or biochemical hyperandrogenism and hyperinsulinemia, which ultimately leads to infertility. Current diagnosis of PCOS is made by Rotterdam criteria which include Oligo / anovulation, clinical /biochemical effects of hyperandrogenism and poly cystic ovaries (i.e. cysts 2-9 mm in diameter, more than 12 in number arranged peripherally and ovarian volume greater than 10 ml). If two of the above three criterions are satisfied then it can be diagnosed as PCOS.

In ayurvedic classics there is no direct mentioning of this disease rather, symptoms are found under various diseased conditions at various references i.e. menstrual irregularities are described under the heading *nashtartava, arthava kshaya, ashtaartava dhusti* while the description of infertility due to anovulation is scattered. *Pushpaghni Jataharini* mentioned in *Kashyapa Samhita*, *Revati Kalpadhyaya* bears resemblance to the symptom of hyperandrogenism. But features of metabolic dysfunction and polycystic ovarian morphology are not evident from any description.

PCOS is not a completely curable disease. The conventional treatment is mainly symptomatic which includes hormonal therapy and invasive techniques. Moreover it may fail in preventing the long term consequences of PCOS. Thus, it is necessary to modulate an accepted ayurvedic approach towards the disease and formulate the principles of management. If the treatment is planned well by means of

scientific research and applying the *doshic* status, it can make wonders in the curability of complex symptoms of PCOS. This study was a modest attempt to give a light of hope to the agonizing sufferers of PCOS.

PCOS is *kaphavatha* predominant disease cause due to *agnimandhya, ama* and *srotovaigunya*. The treatment is *kaphavata* hara and *pitha vardhaka* along with the avoiding the causative factors. By considering the above facts *Chitrakagrandyadi Kashayam* which is *kaphavatahara, lekhana* and *deepana* and *Navaka guggulu* which is *kaphavatahara* and *medohara* were selected.

MATERIALS AND METHODS

Study design:

Single group
Pre and post interventional study
The patient's status after treatment is compared with the status before treatment

Study setting:

Cases registered as PCOS at the OPD and IPD of Govt. Ayurveda College Hospital for Women and Children Poojappura, Thiruvanamthapuram.

Study population:

Females in the age group 18-34 with Polycystic Ovarian Syndrome attending the OPD and IPD of Govt. Ayurveda College Hospital for Women and Children Poojappura, Thiruvanamthapuram.

Inclusion criteria:

Females of the age limit 18-34 yrs. who are diagnosed as Polycystic Ovarian Syndrome as per Rotterdam Criteria. Any of the two features in following three are required for PCOS to be diagnosed
Oligoovulation /anovulation
Hyperandrogenism (clinical/biochemical)
Polycystic ovaries (12 or more follicles in at least one ovary measuring 2- 9mm in diameter or a total ovarian volume greater than 10cm³)

Exclusion criteria:

- Acromegaly

- Cushing's syndrome
- Primary and secondary amenorrhoea
- Concurrent or previous use of Oral contraceptive pills within last 3 months
- Patients under prolonged medications for various systemic illness
- Androgen producing adrenal tumour and other neoplastic growth
- Patients diagnosed as DUB

Sampling technique:

Consecutive cases with their consent and who satisfy the inclusion criteria and till attaining sample size.

Study tools

Assessment was done using case proforma
 Ultrasonography (abdomen and pelvis)
 Lab investigations – Blood and Urine routine, FBS, PPBS, S. Insulin, S. Testosterone, FSH, LH.

Duration of study

Duration of the study was 18 months.

Study procedure

30 patients were selected from study setting as per inclusion and exclusion criteria. Study was conducted in a single group and clinical symptoms of patients were assessed before starting the treatment. Ingredients of medicines were purchased, powdered and made into drug packets Mode of preparation and administration were also explained to the patients along with written advice in their own local language. *Pathya aahara* and *vihaara* were also recommended. The patients were asked to report on the first day of next menstrual cycle. During that visit amount of bleeding, duration, menstrual interval etc of the previous cycle were recorded. During each visit *kashaya choorna* which was required to prepare medicines for two weeks were given. The study drug was given for a period of 3 months continuously excluding the first three days of each menstrual cycle. Following this, next 3 months were considered as follow up period and the clinical changes in the patient were assessed carefully.

ASSESSMENT

Parameters for the assessment

- Menstrual interval
- Number of follicular cyst
- Volume of ovary
- Ovulation
- BMI

RESULTS

Table 1 Effectiveness of the treatment in reducing menstrual interval

| | MENSTRUAL INTERVAL | | | Loss Percentage | | |
|----|--------------------|-------|-------|-----------------|--------|---------|
| | Mean | SD | Range | | | P value |
| BT | 96.16 | 43.66 | 45-80 | BT-AT | 69.73% | .000** |
| AT | 29.10 | 11.04 | 0-53 | AT-AF | -1.58% | .015* |
| AF | 29.56 | 10.23 | 0-60 | BT-AF | 69.25% | .000** |

*Significant at 5% level(P<0.05), **Significant at 1% level (P<0.01), NS: Not significant (P>0.05)

Table 2 Effectiveness of the treatment in reducing the number of Follicular cysts

| | BT | AT | AF |
|----------------------------|----------|----------|----------|
| Number of Follicular cysts | Numerous | Numerous | Numerous |

Table 3 Effectiveness of the treatment in reducing the Volume of Right Ovary

| Test | Volume of right ovary in cm ³ | | | Loss Percentage | | |
|------|--|------|-------|-----------------|-------|---------|
| | Mean | SD | Range | | | P value |
| BT | 16.84 | 3.38 | 12-24 | BT-AT | 22.20 | .000 |

| | | | | | | |
|----|-------|------|-------|-------|-------|------|
| AT | 13.10 | 3.69 | 8-20 | AT-AF | 11.06 | .000 |
| AF | 11.65 | 3.58 | 10-20 | BT-AF | 30.81 | .000 |

*Significant at 5% level(P<0.05), **Significant at 1% level (P<0.01), NS: Not significant (P>0.05)

Table 4 Effectiveness of the treatment in reducing the Volume of Left Ovary

| Test | Volume of left ovary in cm ³ | | | Loss Percentage | | |
|------|---|------|-------|-----------------|-------|---------|
| | Mean | SD | Range | | | P value |
| BT | 15.30 | 4.43 | 7-26 | BT-AT | 11.11 | .000 |
| AT | 13.60 | 3.93 | 7-22 | AT-AF | 7.72 | .000 |
| AF | 12.55 | 3.93 | 7-22 | BT-AF | 17.97 | .000 |

*Significant at 5% level(P<0.05), **Significant at 1% level (P<0.01), NS: Not significant (P>0.05)

Table 5 Effectiveness of treatment in reducing BMI

| Test | BMI (kg/m ²) | | | Loss Percentage | | |
|------|--------------------------|------|-------------|-----------------|------|---------|
| | Mean | SD | Range | | | P value |
| BT | 27.75 | 3.78 | 20.83-35.30 | BT-AT | 5.65 | .000** |
| AT | 26.18 | 3.12 | 20.45-29.82 | AT-AF | 2.17 | .000** |
| AF | 25.61 | 3.04 | 20.06-29.74 | BT-AF | 7.71 | .000** |

*Significant at 5% level(P<0.05), **Significant at 1% level (P<0.01), NS: Not significant (P>0.05)

Table 6 Effectiveness of the treatment in induction of Ovulation

| Wilcoxon signed rank test | BT - AT | AT- AF | BT-AF |
|---------------------------|---------|--------|-------|
| p | .317 | 1.000 | 1.000 |

DISCUSSION

A classic description of the Polycystic Ovarian Syndrome remains elusive. With the same reason its aetiology and diagnosis also remains controversial. The pathophysiological mechanisms indicate that the aetiology is multifactorial. Since our classical text books failed to find a clinical condition that can be directly correlated with PCOS, the alternate left was to postulate the etiopathogenesis of PCOS by analysing the symptoms, status of *Doshas, Dushyas, Agni, Srotases*, etc.

In PCOS etiological factors disturbs the function of *agni* at various levels (*jatharagni*, seven *dhatvagnis* and five *bhuthagnis*). This leads to formation of *asamyak pachita aahara rasa* (partly metabolised substances) in body. Both vitiated *kapha* and *saama rasa* increase the *snigdhamsa* of the body and causes *srotorodha* finally leading to *vatavaigunya*. Mental factors like stress, anxiety, depression etc can also cause vitiation of *vatha*. Vitiated *vatha* and *kapha* causes *avarana* of *artavavaha srotas* leading to *arthavanaasha* and *vandhyatvam*. PCOS is *kaphavatha* predominant disease cause due to *agnimandhya, ama* and *srotovaigunya*. The treatment is *kapha vata hara* and *pitha vardhaka* along with the avoiding the causative factors. By considering the above facts *Chitrakagrandhyadi Kashayam* which is *kaphavatahara, lekhana* and *deepana* and *Navaka guggulu* which is *kaphavatahara* and *medohara* were selected.

The discussion on effect of treatment on symptoms are as follows:

MENSTRUAL INTERVAL

Before treatment mean interval of menstrual cycle was 96.16 with SD of 8.14 and range 45-80. But after treatment mean interval of menstrual cycle reduced to 29.10 with SD 2.08 and Range 28-53 indicating a loss of 69.73 %. After follow up the mean interval of menstrual cycle were 29.56 with SD 1.93 and range 28-60. This reveals that the treatment is effective in reducing the menstrual cycle. *Deepana, pacana, Kaphavatahara* and *srotoshodhana* properties of the combination might have contributed in normalising the menstrual irregularities.

NUMBER OF FOLLICULAR CYST

After the treatment and follow up period there was no change in the number of follicular cysts. This cannot be taken as a

conclusive statement due to insufficient sample size and follow up period

VOLUME OF OVARY

Before the treatment the mean volume of right ovary was 16.84 with SD of 3.38 and range 12- 24. But after treatment mean ovarian volume significantly reduced to 13.10 with SD 3.69 and Range 8-20 indicating a loss of 22.20%. After follow up the ovarian volume again reduced to 11.65 with SD 3.58.

Before the treatment the mean volume of left ovary was 15.30 with SD of 4.43 and range 7-26. Mean ovarian volume significantly reduced to mean of 13.60 with SD 3.93 and Range 7-22 indicating a loss of 11.11% after treatment and after follow up also the mean ovarian volume shows a significant reduction. This reveals that the treatment is effective in reducing the ovarian volume. *Vatakaphahara* and *Lekhana* properties of the combination might have contributed in reducing the ovarian volume.

BMI

Before the treatment the mean BMI was 27.75 with SD of 3.78 and range 20.83-35.30. But after treatment mean BMI significantly reduced to 26.18 with SD 3.12 and Range 20.45-29.82 indicating a loss of 5.65%. After follow up BMI again reduced .This reveals the effectiveness of the treatment in reducing BMI. The *deepana*, *pacana*, *srotoshodhana*, *Kaphavatahara*, *lekhana*, *medohara* properties of the combination might have contributed in reducing the weight.

OVULATION

Ovulation was absent in all the 30 patients before treatment. After three months of treatment one patient conceived which is the confirmatory sign of ovulation. After follow up of 3 months the status remains same. As per Wilcoxon signed rank test we have p value greater than 0.001 after treatment and after follow up period. This reveals that the treatment was not effective in inducing ovulation. This cannot be taken as a conclusive statement because of insufficient sample size and follow up period.

CONCLUSION

Polycystic ovarian syndrome is heterogeneous multi system endocrinopathy in woman of reproductive age with ovarian expression of various metabolic disturbances and a wide spectrum of clinical features such as obesity, menstrual abnormalities and hyperandrogenism.

PCOS is not a completely curable disease, but the symptoms can be alleviated by medications, life style modifications and practice of adequate exercises. No direct correlation of PCOS is found in Ayurvedic classical texts. *Pushpagni Jaataharini* mentioned in *Kasyapa samhita* bears some similarity with this disease. *Nashtartha*, *Arthavakshaya* and *Vandhya yoni vyapath* mentioned in *Susrutha samhita* can also be taken into account. *Doshic* status in this condition is *Kapha vridhi*, *Vatha vaigunya*. As PCOS is a metabolic disorder, there is impairment of the function of *agni* at various levels (*jatharagni*, seven *dhatvagnis* and five *bhuthagnis*). *Avarana* of *artavavaha srotas* due to vitiated *vatha* and *kapha* leading to *arthavanaasha* and *vandhyatvam* is the basic underlying pathology. The objective of the treatment should be correction of *srotorodha* by internal and external therapies which are *Kaphavatahara* in nature along with the avoidance of causative factors. The study drugs *Chitrakagrandyadi kashayam* and *Navaka guggulu* is found to be highly effective in the management of PCOS due to it *Kaphavatahara* and *agni vardhaka* properties. The combination of above drugs were expedient in normalizing menstrual interval, reducing the volume of ovaries and reducing the BMI though it was not helpful in reducing the number of follicular cyst and in induction of ovulation. Strict dietary regimen and adequate exercise played an important role in improving the clinical condition.

REFERENCES

1. Gita Ganguly Mukherjee, BN Chakravarthy. Poly Cystic Ovarian Syndrome—An Update 1st ed. New Delhi: Jaypee Brother Medical Publishers (P) Ltd; 2007. Page 11, Page 1
2. D.C.Dutta. Text book of Gynaecology. 5th ed. Kolkata: New Central Book Agency (P) Ltd; 2009. Page 440-444.
3. Williams gyn
4. Gita Ganguly Mukherjee, BN Chakravarthy. Poly Cystic Ovarian Syndrome—An Update 1st ed. New Delhi: Jaypee Brother Medical Publishers (P) Ltd; 2007. Page 11, Page 11
5. <http://www.endocrine-abstracts.org/ea/0029/ea0029s8.2>
6. Barbara. L Hoffman MD, John. o. schorge, MD. Williams gynecology. 3rd edition, Mc GrawHill Education, copyright 2016, 2012, 2008 page no. 386-400
7. Gita Ganguly Mukherjee, BN Chakravarthy. Poly Cystic Ovarian Syndrome—An Update 1st ed. New Delhi: Jaypee Brother Medical Publishers (P) Ltd; 2007. Page 11, Page 50.
8. Toulis KA, Goulis DG, Farmakiotis D, et al. Adiponectin levels in women with polycystic ovary syndrome: a systematic review and a meta-analysis. Hum Reprod Update. 2009 May-Jun. 15(3):297-307. Available from <https://en.emedicine.medscape.com/article/256806>
9. Gita Ganguly Mukherjee, BN Chakravarthy. Poly Cystic Ovarian Syndrome—An Update 1st ed. New Delhi: Jaypee Brother Medical Publishers (P) Ltd; 2007. Page 11, Page 51-56, Page 84-88.
10. <https://en.www.women-info.com>