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Research Article

EVALUATION OF INDIGENOUS DRUGS IN THE MANAGEMENT OF PCOD IN TEENAGE GIRLS

K. Bharathi[1]*, C.M. Jain[2], B. Pushpalatha[3]

*[1]Ex-Research Officer (Ayu.), A. L. Research Centre for Ayurveda, VHS campus, TTTI post, Taramani, Chennai, Tamilnadu, India.

[2]Associate Professor, and [3]Lecturer, Dept. of Prasutitantra, National Institute of Ayurveda, Jaipur, Rajasthan, India.

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ABSTRACT

Polycystic ovarian disease is one of the most common gynecological disorders during puberty. This is otherwise known as Stein-Leventhal Syndrome and occurs due to the incorrect set of hypothalamo-pituitary homeostatic during puberty and characterized by oligomenorrhoea / amenorrhoea, delayed periods, hirsutism, hoarseness of voice etc. Based on the clinical features this can be compared with *Alpartava /Artavakshaya* as per the Ayurvedic classics. In *Artavakshaya* (deficiency of *Artva*), *Rajasrava* (menstruation) do not appear in its appropriate time or is delayed. Often gynecologists keep these patients on combination of estrogen and progesterone therapy. Exogenous hormonal treatment again disturbs the endogenous hormonal pattern and the pathology continues. In the present study an attempt has been made to find out safe alternate therapy to cure PCOD and regularize menstruation with Ayurvedic drugs. For the present study, *Ashokarishtam* is selected to improve *Rajodhatu, Kanchanara guggulu* and *Varunadi kashayam* are selected to regress cysts of the ovary. Study carried out in 52 number of teenage girls, out of which, 21 (42.86%) patients have shown Good Response, 10 (20.41%) cases have shown Fair response, 03 (06.12%) cases have shown Poor response, 15 (32.61%) did not show any response and 03 cases were dropped out from the study. On statistical analysis, efficacy of the trial drugs found highly significant in relieving PCOD ($P<0.001$).

KEY WORDS: Stein-Leventhal Syndrome, Teenage girls, Indigenous drugs.

INTRODUCTION

Oligomenorrhoea is one of the commonest gynecological problems in teenage girls. In majority of the cases the reason is polycystic ovarian disease otherwise known as Stein-Leventhal Syndrome. Teenage girls are often brought to the Gynecology clinics with the complaints of Oligomenorrhoea (Scanty menstruation). In some cases it is the reason for delayed puberty. In most of the cases the reason for scanty menstruation is PCOD, diagnosis of which is confirmed on ultra Sonography examination. PCOD is the commonest cause for ovulatory disorder, has proved to be the most difficult to understand and to treat reliably. The incidence varies between 0.5 – 4% and is more common amongst infertile women[1].

In majority of the cases the onset of symptoms is premenarcheal and that pituitary feedback mechanisms are grossly intact. These vicious cycle of events are due to incorrect set of Hypothalamo-pituitary homeostat during puberty. Clinical evidence suggests that dysfunction at the level of both the pituitary and the ovary in women with PCOD may initiate self perpetuating vicious cycle of events. Abnormal gonadotrophic secretion characterized by over production of luteinizing hormone (LH) relative to follicle – stimulating hormone induces hyperactivity of ovarian stromal tissues, atresia of antral follicles and disordered ovarian steroidogenesis. The resulting imbalance of oestrogenic and androgenic steroids in turn accentuates the hyper secretion of LH by the anterior pituitary. Evidences also suggest that PCOD is not simply a spontaneous aberration of an otherwise normal H-P-O axis but rather that a defect exists, which hinders the establishment of

normal ovarian control. FSH secretion remains either normal or decrease due to negative feed back effect of oestrogens and inhibin. Due to relative low level of FSH, there is defective ovarian folliculogenesis due to lack of aromatization[2].

This syndrome is featured with amenorrhoea or oligomenorrhoea, delayed and irregular periods, hirsutism, hoarseness of voice, obesity etc. this complex disorder is characterized by excessive androgen production by the ovaries / adrenals which interferes with ripening of the ovarian follicles[3].

Based on the clinical features this condition can be compared with *Alpartava* / *Artavakshaya* as per the Ayurvedic classics. In *Artavakshaya* (deficiency of *Artava*), *Rajasrava* (menstruation) do not appear in its appropriate time or is delayed (intermenstrual period is prolonged). Menstrual flow is scanty that means it do not lasts for 3-5 days. *Artavakshaya* (Oligomenorrhoea) is the main feature of *Vataja yonivyapath, Vataja artava dushti, Kshina artava dushti, Rajodhatu kshaya* etc[4]. In all these cases '*vata*' aggravation is the cause. *Vata*, especially *Apanavata* is the regulating humor of reproductive system. It governs the secretions of H-P-O responsible for formation of *rajas* (endometrial vascular changes) and *Streebija* (Ovum). *Artavakshaya* with PCOD can be considered due to '*Vidradhi*' in ovaries. *Vidradhi* is formed due to the aggravation of *Kapha* and *Vata dosha*.

Rationale for selection of trial drugs

Maintenance of normalcy of *vata* and suppression of *Kapha* are the two main objectives in treating PCOD patients with *Artavakshaya*. And at the same time treatment is also necessary to enhance the quantity of *rajas* to maintain normal levels. Drugs which are available to enhance *rajas* formation (Emmenagogue) are *Ghritakumari, Ashoka, Krishnatila, Asthisamhari, Vidarikanda* etc. Among these *Ashoka* is *Vata, Kapha hara,* having stimulating effect on endometrium and ovary in positive direction to maintain normal menstruation[5]. *Kanchanara* and *Guggulu* are having *vata, kapha hara, vranasodhaka, lekhana, grandhihara, sothahara* properties*. Varuna* is also *vata, kapha shamaka, bhedana, gulmahara*. Hence *Kanchanara, Guggulu* and *Varuna* are useful in regressing ovarian cysts and bring back normal ovarian function[6].

Hence for the present study, *Ashokarishtam*[7] is selected to improve *Rajodhatu*, *Kanchanara guggulu*[8] and *Varunadi kashayam*[9] are selected to regress cysts of the ovary.

MATERIAL AND METHODS

Study carried out in 52 numbers of teenage girls, who are having H/o Oligomenorrhoea and diagnosed as PCOD based on the evidence of Ultra Sonography of pelvis. Cases are recruited into the study strictly according to the selection criteria and drawn from the OPD of A.L. Research centre for Ayurveda, VHS medical campus, Chennai, after thorough clinical examination and investigation. Study carried out between 2004 and 2008. Out of 52 cases, three cases were dropped out from the study due to irregular follow-up.

Sample size and methods

Sample number	–	52
Design of study	–	Open trial
Number of Groups	–	one

Drug schedule and Dosage

1. *Kanchanara guggulu* – 1gm BD internally for three months along with hot water.
2. *Varunadi kashayam* – 10ml BD internally for three months along with equal water.
3. *Ashokarishtam* – 20 ml BD BD internally for three months along with equal water.

Duration of Treatment: 3 months

Follow up: Once in a month, i.e. at the end of 1st, 2nd and 3rd months.

Investigations: Assessment of USG carried out at the beginning of treatment and at the end of the study.

Inclusion Criteria

1. Girl in the Age between 13 – 19 years
2. PCOD confirmed by USG
3. With minimum three cycles History of Oligomenorrhoea

Exclusion Criteria

1. Age below 13 and above 19 years
2. PCOD associated with any other genital tract abnormalities
3. PCOD with Menorrhagia / Metrorrhagia
4. Oligomenorrhoea with delayed periods
5. Suffering with any other Systemic illness

Withdrawal Criteria

1. Irregular treatment and follow up
2. Any complication arises during treatment

Criteria for Assessment of Results

Good Response – Complete disappearance of cysts on USG and regular normal menstrual flow i.e. bleeding for three days and soakage of two pads on first day, one pad on second and third days.

Fair response – Either disappearance of ovarian cysts on USG or Restoration of normal menstrual flow i.e. bleeding for three days and soakage of two pads on first day, one pad on second and third days.

Poor Response – Non –disappearance of cysts, but restoration of slightly less than normal menstrual flow.

No Response – No change cysts in the ovary and menstrual flow.

Parameters adapted

1. Amount of bleeding

Spotting – One to two inch spot over the diaper	20
Very Scanty - Half diaper on one day & 1/3 to ½ diaper on next day	10
Scanty - One diaper on one day and 1/3 to 1/2diaper on next day	05
Slightly less than normal – one to two diapers for two consecutive days	02
Normal – one or two diaper each for at least two consecutive days	00

2. Duration of Flow

One day	20
Two days	10
Three days	05
Four days	02
Five days	00

3. Pain in abdomen

Very severe – Regular and frequent intake of analgesics / antispasmodics and are always bedridden	20
Severe – Needs often analgesics / antispasmodics and force to take rest	10
Moderate – Pain needs analgesics or rest	05
Mild – Presence of pain abdomen but do not need analgesic / antispasmodic and pain do not limit their physical activity	02
No Pain	00

4. Status of PCOD on USG

Presence of bilateral PCOD	40
Absence of bilateral PCOD	00

OBSERVATIONS

Demographic data

Table 1. Showing the incidence of age

Age in years	No of cases	Percentage
13 years	02	03.85
14 years	07	13.46
15 years	09	17.30
16 years	14	26.92
17 years	00	00.00
18 years	11	21.16
19 years	09	17.31
Total	**52**	**100**

Table 2. Showing the incidence of Body built

Type	Number	Percentage
Heavy	33	63.46
Medium	13	25.00
Lean	06	11.54
Total	**52**	**100**

Table 3. Showing the Incidence of *Prakriti*

	V	***P***	***K***	***Vata Pitta***	***Pitta Kapha***	***Vata Kapha***	***Sama***	**Total**
No	-	-	-	17	12	23	-	**52**
%	-	-	-	32.69	23.07	44.24	-	**100**

V-Vata; P-Pitta; K-kapha

Table 4. Incidence of Occupation

	House wife	Desk work	Labour	Field work	Total
No	03	36	02	11	**52**
%	05.76	69.24	03.84	21.16	**100**

Table 5. Showing incidence of Education

	Number	Percentage
Illiterate	00	00.00
Primary school	04	07.69
Middle school	08	15.39
High school	04	07.69
College	29	55.77
Professional	07	13.46
Total	**52**	**100**

CLINICAL DATA

Table 6. Changes in duration of menstrual flow before & after treatment

Duration of menstrual flow	Before treatment		After treatment	
	No	Percentage	No	Percentage
1 day	17	34.69	02	04.08
2 days	06	12.25	01	02.04
3 days	19	38.77	22	44.89
4 days	01	02.04	08	16.34
5 days	06	12.25	16	32.65
Total	**49**	**100**	**49**	**100**

Table 7. Changes in amount of menstrual flow before & after treatment

Amount of menstrual flow	Before treatment		After treatment	
	No	Percentage	No	Percentage
Spotting	10	20.40	00	00.00
Very scanty	08	16.33	00	00.00
Scanty	27	55.10	11	22.45
Slightly <normal	04	08.17	06	12.25
Normal	00	00.00	32	65.30
Total	**49**	**100**	**49**	**100**

Table 8. Changes in pain abdomen during menstruation before & after treatment

Pain Abdomen	Before treatment		After treatment	
	No	Percentage	No	Percentage
Mild	21	42.86	16	32.65
Moderate	09	18.37	10	20.41
Severe	12	24.49	07	14.29
Very severe	02	04.08	00	00.00
No pain	05	10.20	16	32.65
Total	**49**	**100**	**49**	**100**

Table 9. Changes in consistency of menstrual blood before & after treatment

Consistency of menstrual blood	Before treatment		After treatment	
	No	Percentage	No	Percentage
Normal	23	46.94	33	67.35
Clotted	16	32.65	08	16.33
Thin	07	14.29	06	12.25
Mucoid	03	06.12	02	04.08
Total	**49**	**100**	**49**	**100**

Table 10. Changes in PCOD on USG before and after treatment

Bilateral PCOD	Before treatment		After treatment	
	Number	%	Number	%
Present	49	100.00	33	67.34
Absent	00	00.00	16	32.66
Total	49	100	49*	100

*Drop outs not calculated for responses

Table 11. Results of the study

	GR	FR	PR	NR	Total
Number	21	10	03	15	49*
Percentage	42.86	20.41	06.12	32.61	100

* Drop outs not calculated for responses

Table 12. Statistical analysis of efficacy of trial drug on over all parameters

	Before treatment	After treatment	Difference
Mean	98.28	31.71	68.65
SD	±14.85	±26.84	±31.32
SE	2.80	5.07	5.29
-t			12.96
P			<0.001

DISCUSSION

Present study carried out to evaluate clinically *Ashokarishtam, Varunadikashayam* and *Kanchanara Guggulu* in teenage Poly cystic ovarian disease cases. A total of 52 cases were studied; of which 21 (42.86%) patients have shown Good response, 10 (20.41%) cases have shown Fair response, 03 (06.12%) cases have shown Poor response, 15 (32.61%) did not show any response and 03 cases were dropped out from the study.

In *Ashokarishta*, *Ashoka* (*Saraca asoka*) is the main ingredient. It is having stimulating activity on the endometrium, ovary. It is containing phenolic-glycoside and non-phenolic glycoside. Phenolic glycoside exhibited spasmodic action on smooth muscles due to direct myotropic action. Spasmodic action of phenolic glycoside on uterus was not blocked by pentolinium and atropine. Pure phenolic glycoside is non-toxic in nature. It is having pharmacological activities like astringent, anti-tumor, anti-fungal, antifertility, spasmodic action in uterine affections etc[10].

In *Varunadi kashayam, Varuna* (*Crataeva nurvala* Sensu Kanj. & Das) is the main

ingredient. *Varuna* is *Kaphavata samaka, Pittavardhaka, Bhedana, Krimighna, Gulmahara, Jvaraghna* properties. The drug is having pharmacological properties like anti-inflammatory, anti-arthritic, antipyretic, antibacterial effects. Aqueous extract of air dried bark was shown spasmodic action on uteri of rats, rabbits, guinea pigs, dogs and human beings and cholinergic action on isolated ileum of rabbit, guinea pig and rat[11].

In *Kanchanara Guggulu*, *Kanchanara* (Bauhinia variegate) and *Guggulu* (Commiphora wightii) are the main ingredients. *Kanchanara* is having *Sothahara, Grandhihara, Kaphahara, Vranasodhaka* etc properties. *Kanchanara* bark showed significant anti-inflammatory activity. The petroleum ether, benzene, chloroform and alcohol extracts did not show any toxicity either orally or intraperitonially. It is found effective in goiter. It is probably having some thyroid hormone-like activity in addition to iodine contents which might be responsible for neutralizing the thyroid gland both morphologically as well as functionally[12].

Guggulu is having *Sothahara, Srothorodhahara, Vranaprakshalana*, *Lekhana*, *Rasayana, Saraka, Raktasodhaka, Tridoshaghna* properties. Gum resin showed different pharmacological properties like astringent, aphrodisiac, antispasmodic, emmenagogue, thyroid stimulating, hypolipidaemic, hypocholesteraemic activities[13].

CONCLUSIONS

1. PCOD or Stien leventhal syndrome is the commonest problem seen in teenage girls.
2. Most of the times it manifests as oligomenorrhoea or amenorrhoea or delayed and irregular periods along with hirsutism, hoarseness of voice, obesity etc.
3. This complex disorder is characterized by excessive androgen production by the ovaries / adrenals which interfere with ripening of ovarian follicles.
4. Modern medicine gynecologists give treatment with combined hormonal pills to regularize periods, but it will further disturb the endogenous hormonal pattern.
5. In Ayurveda, drugs having emmenagogue property are available in plenty and drugs also having fibrolytic activity are also available.
6. Based on previous studies and properties *Ashokarishtam*, *Kanchanara guggulu* and *Varunadi kashayam* are selected for the study.
7. Study carried out in 52 number of cases; of which 21 (42.86%) patients have shown Good response, 10 (20.41%) cases have shown Fair response, 03 (06.12%) cases have shown Poor response, 15 (32.61%) did not show any response and 03 cases were dropped out from the study.
8. On statistical analysis, efficacy of the trial drugs is found highly significant in relieving PCOD ($P<0.001$).
9. *Ashokarishta* is having stimulating activity on the endometrium, ovary and containing phenolic-glycoside and non-phenolic glycosides. It might have acted through these ingredients in the regularization of menstruation and improvement in menstrual blood.
10. *Varunadikashayam* and *Kanchanara guggulu* are well proved fibrolytic drugs and hence both might have worked in synergy in curing the follicular cysts.

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***Address for correspondence**
Dr. K. Bharathi
Research officer (Ayu.)
Scientist -3
National Institute of Indian Medical Heritage, Survey No. 314
Revenue Board Colony
Gaddiannaram, Hyderabad - 500036
Andhra Pradesh, India.
Cell: +919492047131
Email: baruhunt@rediffmail.com