



A THERAPEUTIC STUDY ON THE EFFECT OF CHIRABILVA (*Holoptelea integrifolia* Roxb. Planch.) BARK CHURNA IN THE MANAGEMENT OF ADOLESCENT PCOS

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ABSTRACT

Adolescent PCOS rate is increasing alarmingly. Chirabilva is a drug, which is commonly using for yonirogas from time immemoial. In this study 30 patients were registered after clinical and laboratory examination as per our protocol. Out of 30 patients, 26 patients turned up for full follow up. The drug Chirabilva choorna showed statistically highly significant result in S. Testosterone level, days between menstrual cycle, menstrual duration, body weight, Ferriman-Gallwey assessment of face and chin, BMI, Waist Hip ratio, acne. The result of both ovaries and FSH/LH were observed insignificant. This reveals Chirabilva choorna is therapeutically effective in treating some aspects of adolescent PCOS.

KEY WORDS

Adolescent PCOS, *Holoptelea integrifolia* Roxb. Planch, Serum. Testosterone, S.FSH/LH, Ferriman-Gallwey assessment, Waist Hip ratio, BMI

INTRODUCTION

Current scenario Polycystic ovarian syndrome is emerging as a major problem of women. It is not merely an endocrinal and gynaecological disorder but a metabolic syndrome which affects richness of femininity. PCOS is one of the major causes of adolescent hyper androgenism and menstrual irregularities. PCOS is characterised by a complex set of symptoms the outward signs and symptoms of the disease are as a result of hyperandrogenism. This occurs due to overproduction of testosterone from ovarian thecal cell as well as adrenal

glands. If we can be able to treat the patient in early stages it will be more beneficial to the public. so adolescence is proper age group. Ayurveda gives prime importance to safeguard the health of woman as she is considered as the elemental cause for the coming generation. But the life style changes of modern society – sedentary life style, altering food habits and intolerable stress makes the women more vulnerable to this disease. Absence of direct mentioning about this disease in Ayurvedic treatises indicate that this condition was comparatively less prevalent in that ancient era. Whereas, Jathagni Pushpaghni mentioned by Acharya Kasyapa bears some resemblance with symptoms of PCOS like obesity and hirsutism. According to Susruta Samhita sarira sthana (Dalhana teeka), kapha vatavruha causing arthava kshaya. Considering the disease PCOS, both kapha and vata doshas are affected. According Caraka and Vagbhada, treatment principle, of kaphaja yoni roga is rooksha ushna oushadies. Apana vayu (Ashatanga samgraham, suthrasthana) is responsible for sukra arthava pravarthi, any vitiation of apana vayu will cause sukra arthava dushti. So treatment principle of PCOS will be kapha nasaka and vatanulomana. Chirubilva is the drug which commonly using for arthava doshas by time immemorial. According to Kasyapa Samhita, samanya chikitsa of grahabhatha includes usage of chirubilva, so it will be useful in Jatagni Pushpaghni grahabhatha. Chirubilvadi Kashaya which is mainly using for apana vayu vaigunya and kapha kshaya, where chirabilva is the main drug. According to saligrama and bhavaprakasha nighantu it is thiktha rasa, bhedana, laghu rooksha guna, ushna veerya and kaphavatha samaka. Chirubilva choorna is commonly using for arthavadoshas by eminent practioners. But no research has been conducted yet to clinically evaluate its effect on adolescent PCOS, as a single drug. Hence a clinical study to evaluate the effect of chirabilva churna (bark) in the management of adolescent PCOS was taken up.

MATERIALS AND METHODS

For the clinical study, a total of 30 patients fulfilling the diagnostic criteria of PCOS, approaching the O.P.D of Karnataka Ayurveda Medical College and Hospital Mangalore were selected for the study. The patients were assigned in to a single group taking in to consideration of inclusion and exclusion criteria for the interventional study.

Diagnostic criteria

Androgen excess society (AES) guidelines emphasizes the importance of clinical or biochemical hyperandrogenism. The guidelines include the following three criteria, at least two of the following three criteria are required for PCOS to be diagnosed but one symptom should be hyperandrogenism.

1. Irregular or absent menstruation
2. Clinical or biochemical sign of hyperandrogenism
3. Polycystic ovaries on ultrasound scan.

Inclusion criteria

1. Patients age group 13-20 yrs
2. Patients with menstrual irregularities
3. Patients with hirsutism
4. Patients with ultra sonographic evidence of poly cystic ovary.

Exclusion criteria

Patients with other causes of oligo ovulation or anovulation

1. Hypothyroidism
2. Hyper prolactnemia
3. Hyper adrenalism
4. Androgen secreting tumours
5. Other systemic and congenital diseases.

Preparation of the drug

Chirabilva bark was collected from the natural habitat. The collected sample of chirabilva bark was authenticated by Dr Krishna Kumar G Professor, Department of Applied Botany, Mangalore University and the department of of PG studies of Dravyaguna Vijnana, Karnataka Ayurveda Medical College, Mangalore. The collected raw drugs were washed thoroughly, removed all earthy and foreign materials and then dried properly. The dried bark were powdered and stored in air tight bottles. Patients were administered chirabilva bark churna in a dose of 6 gm twice daily before food with water for the period of 3 months.

Clinical Trial

The Clinical research was approved by the Institutional ethics committee, Karnataka Ayurveda Medical College Mangalore, India.

Investigations

USG Abdomen, Serum Testosterone (S. T), Serum FSH (S.FSH), Serum LH (S. LH) were performed before and after the study.

Assessment Criteria

- 1 Hyperandrogenism is characterized by hirsutism is assessed as per FERRIMAN GALLWEY scoring system.
- 2 Polycystic ovaries on ultrasound scan
- 3 Serum Testosterone
- 4 Serum FSH/LH ratio

USG, S. Testosterone, S.FSH/LH ratio are assessed on 0TH and 90TH day of treatment.

Assessment of signs and symptoms

1. Menstruation starts on
2. Duration
3. Body weight
4. Hirsutism
5. Acne
6. BMI
7. Waist Hip ratio

These are assessed on 0TH, 30TH, 60TH, 90TH day and 120TH day.

Statistical analysis

Values obtained were statistically evaluated using paired 't' test. In the entire statistical test, the p values less than 0.05 were considered to be statistically significant.

RESULTS

There is no significant change in length and breadth of both ovaries. There is highly significant change in S. Testosterone before the treatment was started and after treatment as the t value was 5.987 with p value <0.01.

There is no significant difference in FSH LH Ratio before the treatment was started and after the treatment as the t value was 1.307 with p value 0.203. There is highly significant change in days between menstrual cycle

results, before the treatment and after treatment as the t value was 10.83 with p value <0.01 . After the follow up period, the data were compared with that of initial data and found highly significant as the t value 11.05 with p value <0.01 . There is highly significant change in duration results before the treatment and after treatment as the t value was 12.231 with p value <0.01 . After the follow up period, the data were compared with that of initial data and found highly significant as the t p value <0.01 . There is highly significant change in body weight results before the treatment and after treatment as the t value was 10.27 with p value <0.01 . After the follow up period, the data were compared with that of initial data and found highly significant as the t value was 10.17 with p value <0.01 . There is highly significant change in Ferriman-Gallwey face results before the treatment and after treatment as the t value was 12 with p value <0.01 . After the follow up period, the data were compared with that of initial data and found highly significant as the t value was 12 with p value <0.01 . There is highly significant change in Ferriman-Gallwey chin results before the treatment and after treatment as the t value was 6.872 with p value <0.01 . After the follow up period, the data were compared with that of initial data and found highly significant as the t value was 6.872 with p value <0.01 . There is highly significant change in BMI results before the treatment and after treatment as the t value was 8.325 with p value <0.01 . After the follow up period, the data were compared with that of initial data and found highly significant as the t value was 6.872 with p value <0.01 . From the analysis it could be observed that there is highly significant change in Waist Hip results before the treatment and after treatment as the t value was 3.53 with p value <0.01 . After the follow up period, the data were compared with that of initial data and found highly significant as the t value was 3.53 with p value <0.01 . There is highly significant change in acne results before the treatment and after treatment as the t value was 12.13 with p value <0.01 . After the follow up period, the data were compared with that of initial data and found highly significant as the t value was 12.13 with p value <0.01 .

DISCUSSION

There is no significant change in length and breadth of both Rt and Lt ovary. Chirabilva choorna is not having the property to reduce size of the ovary or it may require more time for the reduction in the size of the ovary. S.Testosterone level in PCOS is increasing due to metabolic error or agni vaishamya, Chirabilva choorna is deepana and pachana so it may correct the agni vaishamya. May be because of this property S.Testosterone level became decreased. All the 26 participants were under normal range, if we give this choorna in those who have abnormal values of FSH/LH ratio, may give good results. Chirabilva choorna is highly beneficial for

correcting the menstrual cycle. Because it is Yoni dosha hara according to Nighantu ratnakara, Dhanwanthari Nighantu and Rakthadoshajith by Dhanwanthari. Nighantu. It is good for yoniroga according to Madanapala Nighantu. Dosha karma of Chirabilva is Vata and Kapha hara. According to Ashtanga Hridaya without the involvement of vata dosha there is no yoni roga, Chirubilwa is one of the best drug for vatanuloma and Kaphasamana also. According to Nighantu ratnakara, it is Pithavath and yonidoshajith. It is having thikta kashaya rasa, laghu rooksha theekshna guna, ushna veerya and Katu vipaka. These all karmas and rasadi gunas supporting for correcting menstruation. Lekhana property of Kashaya thikta rasa correcting srotho rodha of arthava vaha srotas. Gunas like Laghu, rooksha, theekshna helps to correct the srotho rodha of menstrual blood flow. Deepana, pachana, meda vasa soshana property of thikta rasa helps the Chirabilva to reduce body weight. Laghu rooksha theekshna gunas also helpful to reduce body weight. Vishama pravarthi of dhathu parinama is the responsible for medo vridhi, its deepana pachana helps to regulate dhathu parinama so it reduce body weight. Jathagni Pushpaghni, a grahabhatha disease, mentioned by Acharya Kasyapa bears some resemblance with symptoms of PCOS like obesity and hirsutism. According to Kasyapa Samhita, samanya chikitsa of grahabhatha includes usage of chirubilva. According to modern point of hirsutism is due to metabolic error which is causing abnormal testosterone production, Chirabilwa is the drug which highly effective to correct the metabolic activity by its deepana pachana property. Chirabilwa choorna shows good results against BMI, may be due to its medohara property which is described by Dhanwanthari nighantu, lekha bhedana property by Bhavaprakasha and Nighantu ratnakara. Waist-to-hip ratio compares waist measurement to hip measurement. Higher ratios can mean more fat around waist. This can lead to a higher risk for PCOS like metabolic disorders. Here also we assessing the efficacy of the Chirabilwa choorna in medo hara property. According to Raja nighantu and Saligramanighantu Chirabilva is twakdosahara, and charmadoshanuth, according to Shodala Nighantu. Kleda haratwa soshana due to thikta Kashaya rasa. Above said properties helps in reduce Acne.

Mode of action of Chirabilva Choorna in treating PCOS

In Polycystic ovarian syndrome, there is involvement of rasa, meda, and arthavavaha srotases. It is a metabolic disorder where there will be a impaired function of agni at various levels(seven dhatwagni). To treat PCOS one should select the drug which posses tikshna, ushna, chedhana, bhedana properties. Chirabilva is a agneya dravya, with dipana, pachana properties. It removes ama. The drug mainly act on apanavata and because of its anuloma property it is beneficial in treating PCOS. Chirabilva also removes kaphavata avarana. So it treat the

basic pathology. The properties of Chirabilva having capable of Samprapthi Vighatana in PCOS particular condition helps in relieving some of the symptoms effectively.

CONCLUSION

Clinical study revealed that Chirabilva choorna showed statistically highly significant result in S.Testosterone level, days between menstrual cycle, menstrual duration, body weight, Ferriman-Gallwey assessment of face and chin, BMI, Waist Hip ratio, acne. The result of both ovaries and FSH/LH were observed insignificant. This reveals Chirabilva choorna is therapeutically effective in treating some aspects of adolescent PCOS. Lifestyle changes such as diet modification and exercise along with medication can give good results.

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