



Case Study

AYURVEDIC INTERVENTIONS IN ADOLESCENT POLYCYSTIC OVARY SYNDROME: A CLINICAL CASE INSIGHT

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ABSTRACT

Polycystic Ovary Syndrome is a condition marked by hyperandrogenism and prolonged anovulation. It involves hormonal imbalance that disrupts menstruation, causing anovulation, hirsutism, and acne. Overweight and obesity are common and add further risk. Diagnosis is based on ovulatory dysfunction and excess androgen levels. The following are suggested indicators of ovulatory dysfunction: consecutive menstrual intervals >90 days even in the first year after menstrual onset; menstrual intervals persistently <21 or >45 days 2 or more years after menarche; and lack of menses by 15 years or 2-3 years after breast budding. Androgen excess is indicated by moderate-to-severe hirsutism, persistent acne unresponsive to treatment, or elevated serum total/free testosterone. For adolescents who have features of PCOS but do not meet diagnostic criteria an 'at risk' label. Lifestyle modification is the first-line treatment for overweight and obese adolescents with PCOS, along with combined oral contraceptives. Untreated PCOS can lead to irregular cycles, infertility, and metabolic disorders. *Artavakshaya*, described in Ayurveda as scanty, delayed, or absent menstruation, reflects the clinical features of adolescent PCOS. Treatment includes *Deepana*, *Pachana*, *Vata Kapha Shamana*, *Srotoshodhana*, *Vatanulomana*, and use of *Agneya Dravyas*. This article highlights the Ayurvedic approach to adolescent PCOS through the concept of *Artava Kshaya* and presents a basal-level treatment strategy via a case study. A 17-year-old female with history of irregular menstruation and prolonged cycles up to 90 days for the past 2 years was treated with Ayurvedic internal medicines. Within 10 days post-treatment, her menstruation resumed and remained regular for three cycles, with noticeable weight loss. This case demonstrates the potential of Ayurveda in managing adolescent PCOS.

INTRODUCTION

Polycystic ovary syndrome (PCOS) is one of the most common endocrine conditions, affecting 8–13% of women and 3.4–19.6% of adolescent girls^[1]. It is also associated with significant morbidity including impaired reproductive health, psychosocial dysfunction, metabolic syndrome, cardiovascular disease, and increased cancer risk. The definition of adolescence given by the World Health Organization, is the time frame between the ages of 10 and 19, which

includes important and critical changes in puberty, growth, and development.^[2] Adolescent PCOS diagnosis is both controversial, versatile and difficult since typical pubertal physiological changes, such as irregular menstrual cycles, acne and polycystic ovarian shape on pelvic ultrasound sound with the diagnostic criteria for adult PCOS.^[3] Various patterns of menstrual irregularity may be seen in adolescents with PCOS including primary amenorrhea, secondary amenorrhea, oligomenorrhea, and even excessive uterine bleeding.^[4] Although the presence of polycystic ovary morphology (PCOM) is included as a key diagnostic criterion of PCOS in adults, it is currently not recommended for the diagnosis in adolescents. As such, the diagnosis of PCOS in adolescents currently hinges on evidence of ovulatory dysfunction and androgen excess. Recommended evidence of ovulatory

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dysfunction includes; Identify irregular menstrual cycles based on years after menarche; a single cycle lasting more than 90 days in > 1 year post-menarche, cycles lasting less than 21 or more than 45 days in > 1 to < 3 years post-menarche, cycles that are less than 21 or longer than 35 days in > 3 years after menarche. During the normal pubertal transition, irregular menstrual cycles (less than a year after menarche) are typical. Recommended evidence of androgen excess include: moderate to severe hirsutism; persistent acne unresponsive to topical therapy; and persistent elevation of serum total and/or free testosterone level.^[5] It is not advised to use anti-Müllerian hormone levels to diagnose PCOS. For adolescents who exhibit PCOS symptoms but do not fit the diagnostic standards, they are classified as "at risk" may be taken into consideration with suitable symptom management and frequent reassessments. Menstrual cycle re-evaluation can occur over 3 years post menarche and where only menstrual irregularity or hyperandrogenism are present initially, evaluation with ultrasound can occur after 8 years post menarche. If left untreated, it can lead to serious health complications. The most immediate effect is irregular periods and anovulation, which may result in infertility later in life. This happens because women with PCOS often have hormonal imbalances, particularly increased levels of male hormones like testosterone. This disrupts the regular ovulation process. Over time, untreated PCOS increases the risk of type 2 diabetes due to insulin resistance. It can also lead to metabolic syndrome, high blood pressure, and high cholesterol, raising the chances of heart disease. Additionally, long-term anovulation may cause thickening of the uterine lining, increasing the risk of endometrial cancer.

Treatment may decrease risk of future comorbidity even in the absence of a definitive diagnosis. Goals of treatment are to improve quality of life and long-term health outcomes. Lifestyle modifications remain first-line management of overweight and obese adolescents with PCOS.⁶ Combined oral contraceptives (COC) are first line pharmacotherapy for management of menstrual irregularity and acne, and metformin is superior to COCs for weight reduction and improved dysglycemia. The estrogen-progesterone combination suppresses the endogenous hypothalamic-pituitary-ovarian (HPO) axis and thereby interrupts the pathophysiologic mechanism of PCOS resulting in reduced ovarian androgen production.^[7]

In Ayurveda, the menstrual cycle is considered an essential indicator of overall health. According to classical Ayurvedic texts, irregularities in menstruation are categorized under conditions such as *Artava Dushti*, *Yonivyapad*, *Artava Kshaya*, *Anartava*, *Pushpagni*, and *Nashtartava*, though Ayurveda does not

equate these with a single specific disease entity.^[8] Among these, *Artava Kshaya*-characterized by scanty (*Alpata*), delayed (*Yathochita kale adarshana*), or absent menstruation^[9]- corresponds closely with the clinical presentation of adolescent polycystic ovarian syndrome (PCOS).

Pathophysiologically, *Artava Kshaya* involves the obstruction of *Artavavaha Srotas* by excessive *Kapha* and *Meda*, while vitiated *Vata* fails to facilitate the release of a mature ovum, leading to oligo- or anovulation. The combined vitiation of *Vata* and *Kapha* produces *Avarana*, an obstruction that impedes *Vata*'s normal movement, essential for follicular rupture and ovulation. Prolonged imbalance results in *Srotorodha* (blockage of reproductive channels) and *Dhatu kshaya* (depletion of tissues), particularly affecting *Rasa* and *Rakta dhatus*, which are critical for menstrual health and fertility.

Therapeutic management emphasizes *Deepana* (enhancing digestion), *Pachana* (metabolic correction), *Vatanulomana* (regulating *Vata*), *Artavavaha Srotas Shodhana* (purification of reproductive channels), and *Vata-Kapha Shamana* (balancing of humors). The use of *Agneya Dravyas* aids in clearing *Srotovarodha*, while *Pitta Vardhaka Dravyas* promote menstrual flow, collectively restoring physiological menstruation and reproductive balance.^[10]

Case Report

A female patient, 17 years old, came to Prasuti tantra and Streeroga OPD of Govt. Ayurveda College, Thiruvananthapuram on 2/5/2024 with chief complaints of Irregular menstruation with prolonged interval up to 70 days since 2 years. USG revealed Bilateral PCOD with an ovarian volume of 13.6cc and 14.6cc of right and left ovaries respectively. She took allopathic medication and her periods was regular only on medication. She took medication only for 6 months. Her cycles became irregular on withdrawal of medicines. She noticed weight gain and blackish discolouration over neck region gradually. So, she came to our hospital for further consultation and Ayurvedic treatment.

Menstrual History

Age of menarche: 13 years
 Cycles: Irregular
 Interval: 30-70 days
 LMP: 21/02/2024
 Bleeding: WNL
 Duration: 6-7 days
 Dysmenorrhea: Nil
 Clots: Nil
 No of pads/day: 2 -3/day
 Night pad change: Nil
 Discharge per vagina: Absent
 Itching: nil
 Foul smell: nil

Family History

Father has H/O DLP

Mother has H/O irregular periods with heavy menstrual bleeding.

Surgical History

No significant history

Personal History

Appetite-Normal

Sleep-Sound

Bowel-Normal

Micturition-Normal

Diet - Untimely food intake, prefer nonveg fried foods, junk foods, pastries, red-meat, chocolate etc.

General Examination

Built- Overweight

Weight- 75 kg

Height- 165cm

BMI – 27.5kg/m²

Pulse rate - 76bpm

BP-118/80mm hg

Respiratory rate- 20 beats per min

Temp-37.4C

Ashtasthana Pariksha

- *Nadi* - Vata kaphaja
- *Mootra* - Peeta mutrata
- *Mala* - Abadha
- *Jihwa* - Alipta
- *Shabda* - Spashta
- *Sparsha* - Anushna sheeta
- *Druk* - Vyaktham
- *Aakruti* - Sthoola

Dasavidha Pariksha

- *Prakruti* – Vata-Kapha

Treatment Protocol

- *Vikruti* - Kapha vataja (*Alpa bala*)
- *Sara* - Medosara
- *Samhanana* - Alpa
- *Pramana* - Sthoola
- *Satmya* – Sarvarasa Satmya
- *Satva* - Madhyama
- *Aahara Shakti*- *Abhyavaharana Shakti* - Madhyama
- *Jarana Shakti* - Madhyama
- *Vyayama Shakti* – Avara
- *Vaya* – Yuva Avastha

Systemic Examination

- CVS: S1 S2 Normal
- CNS: Well-oriented, conscious
- RS: Normal vesicular breathing, no added sounds.
- P/A: Soft, non-tender

Investigations [Hematology (02/05/2024)]

Hb-12.6g%

T. Cholestrol- 252mg%

LDL-167mg%

Triglycerides-203mg%

USG Abdomen and Pelvis (30/04/24)

Retroverted uterus of size 6.2×3.3×2.8 cm

Endometrial thickness-13.9 mm

RO-3.7×2×3 cm, Vol -13.6 cc

LO-3.6×2.8×2.7 cm Vol-14.5cc

Bilateral ovaries with polycystic morphology.

Samprapti Ghataka*Dosha* - Kapha vata*Dushya* – Rasa, Rakta, Mamsa, Medas and Artava*Agni* – Samagni*Srotas* – Artavavaha srotas*Srotodushti* – Sanga (obstruction)**Internal Medicines**

Medicines	Dose	Time
<i>Ashtachurnam</i>	0 – 10gm - 0	At noon with buttermilk before food.
<i>Varanadi kashyam</i>	60ml-0-60ml	Twice daily before food.
<i>Abhayarishtam</i>	20ml-0-20ml	Twice daily after food.
<i>Rajapravarthini vati</i>	2-0-2	Twice daily after food.
<i>Tilakwatha granules</i>	1tsp-0-1tsp	Twice daily

External Procedures

<i>Udwartanam</i> with <i>Kolakulathadi churnam</i>	7 days
<i>Snehapana</i> with <i>Pippalyadi anuvasana thaila</i>	7 days
<i>Abhyanga & Ushma sveda</i> with <i>Karpooradi thailam</i>	3 days
<i>Virechana</i> with <i>Hingutriguna thaila (15ml)</i>	
<i>Churna pinda sveda</i> with <i>Karpooradi thailam</i>	5 days
<i>Yoga vasthi</i>	8 days
<i>Kashaya vasthi</i> with <i>Saptasaram kashayam</i>	
<i>Snehabasti</i> with <i>Pippalyadi anuvasana thailam</i>	

OBSERVATION AND RESULT

Signs and Symptoms	Before Treatment	Completion of 1 st Menstrual Cycle After Treatment 13/6/2024	Completion of 2 nd Menstrual Cycle After Treatment 15/7/2024	Completion of 3 rd Menstrual Cycle After Treatment 14/8.2024
Interval between two cycles	60 – 90 days	30-32 days	30-32 days	28-30 days
Duration of bleeding	6-7 days	5-6 days	5-6 days	5-6 days
No. of pad used per day	2-3 pads	3-4 pads	3-4 pads	3-4 pads
Abdominal pain	nil	nil	nil	nil
Weight	75kg	70kg	68kg	66kg

Diet and Lifestyle Advised

	Pathya	Apathya
<i>Ahara</i>	<i>Laghu ahara</i> like <i>Shali</i> rice. <i>Ushna ahara</i> like fish and meat. <i>Pitta vardhaka</i> food like <i>Kulaththa</i> , curd, sesame, garlic etc. Green and leafy vegetables like moringa, spinach etc. Fruits like grapes, pomegranate etc.	Carbohydrate containing food items like potato etc. Excessive use of sugar, fried items, bakery items etc. Beverages like soft drinks.
<i>Vihara</i>	Daily exercises Walking for atleast 30-40 minutes.	Untimely food Excessive sleep or day sleep. Suppression of natural urges. Sedentary lifestyle.

DISCUSSION

PCOS diagnosis during adolescence is more challenging and controversial due to an overlap with physiological events of puberty, which are part of the diagnostic criteria in adult women. This is summarized by the available evidence in relation to PCOS diagnostic criteria for adolescents highlighting the need for using two main criteria (NIH criteria): the first one is the presence of irregular menstrual cycles which must be well defined according to the number of years post-menarche and the second one is hyperandrogenism. The research including adolescents who meet only one of the PCOS diagnostic criteria either irregular menstrual cycles or hyperandrogenism is limited at present but these adolescents should be considered "at risk of PCOS" and ongoing follow up should be established with reinforcement of healthy lifestyle.^[11] Despite the fact that PCOS is not specifically cited in traditional Ayurvedic literature, its symptomatology is very similar to *Artava kshaya*, which includes the vitiation of *Kapha* and *Vata* and obstruction of *Artavavaha Srotas*. A comprehension of *Prakriti*, *Srotas*, *Dushya*, and *Dosha* are vital for both diagnosis and therapy. Unhealthy eating habits and lifestyle choices, or *Apathya Aahara Viharas*, are the root cause of *Arthava Upadathu Dushti* and it results in *Aama* formation. Thus, the *Aama* vitiates the remaining *Dhatus*, resulting in excessive hair growth and weight gain. *Medho* and *Kapha Dushti* results from consuming too much *Abhishyandi ahara*, *Madhura*, *Athisnigdha*, *Avayayama* and *Divaswapna*. The aim of Ayurvedic treatment is Disrupting the *Samprapti* which causes

illness. The measures to disrupt the pathogenesis includes *Deepana pachana*, *Samsodhana*, *Vatanulomana* and *Pittavardhaka upayas*. It elevates *Agni* and does *Ama pachana*, thus normal menstruation occurs.

The symptoms of *Artava kshaya* includes *Alpata*, *Yonivedana*, and *Yathochithakale Artavaadarshana*. *Srotoavarodha* is eradicated by *Artavavaha Sroto shodhana*, which also brings back the usual flow of menstruation. *Varanadi Kashaya* is *Kaphavatahara*, *Medohara* and *Deepana pachana*. *Ashtachurna* and *Abhayarishtam* along with it enhances the *Deepana* and *Vata anulomana* action. *Raja Pravartini Vati*'s primary constituents include *Hingu*, *Kumari*, *Tankana*, and *Kasisa*. The properties of *Hingu* include *Shoolahara* and *Vatanulomana*, which aid in the use of *Artavajanana*. *Kasisa* aids in *Rakta Dhatu Vridhhi*, enhances uterine blood circulation. It also acts as *Rasayana* and *Balya*, strengthen the uterine muscles to facilitate easy ejection of menstrual blood. *Tankana*, a medicine called *Garbhashaya sankochaka*, which increases the tonicity of the uterine muscle, aids in normal harmony during contraction and restores *Apana vata*'s function. *Tila* possesses *Agnideepaka* and *Vatahara* properties that will pacify *Agnimandya* and result in the formation of proper *Rasadhatu*, which will then lead to the formation of its *Upadhatu*, or *Artava*, and *Vatahara* properties that will pacify *Vatadosha*, resulting in proper *Nishkramana* of *Artava*. All medications have *Agneyatwa* and *Ushna virya* qualities, which improve blood circulation in the *Yoni* and

Garbhasaya and eliminate the *Sroto avarodha*, resulting in the development of a healthy menstruation.

Udwarthanam is a *Rookshana* procedure which is a *Poorvakarma* of *Sodhana* in *Mamsala*, *Medura* and *Kapha vridha* condition. *Kolakulathadi churna* is *Srothosodhana* and *Vatakapha samana*. *Snehapana* prepare the body for *Sodhana* and bring doshas situated in peripheral tissues to *Koshta*. *Pippalyadi anuvasana thaila* is *Teekshana* and *Srotosodhana*. *Virechana* expels *Utklishta dosha* and helps to reduce weight. *Hingutiguna thaila* is *Vata anulomana* and *Srotosodhanam*. *Vasthi* is the most significant treatment which releases obstructions in the way of *Vata dosha* and thus regulates the normal phenomenon of *Vata*. The patient was instructed to take nutritious and well-balanced medications during this time. Diet that includes lukewarm water, fruits, vegetables, milk, ghee, *Lashuna*, *ragi* and should avoid spicy, oily, and junk food. Additionally, she was counseled to go to bed early, wake up early, yoga, meditation, and *Pranayama*.

CONCLUSION

The principles of Ayurveda play a crucial role in disease treatment. A treatment plan is developed after a thorough analysis of the disease's *Samprapti*, considering factors like *Prakruti*, *Lakshana*, and *Upashaya-anupashaya*. PCOS is a prevalent endocrinopathy that affects women in their adolescent and reproductive years and the primary reason for infertility. In present case study, Ayurveda treatment helped in improving ovarian function as well as in combating hormonal imbalance and regularizing normal menstrual cycle. Additionally, ultrasonography reveals decreased ovarian volume and polycystic appearance. *Sodhana*, *Agneya dravaya upayoga* and *Pittala ahara* etc., helps to removes the *Srothavarodha* and thus corrects the menstruation. According to the study's findings, ayurvedic medications are highly effective in menstrual pattern through improvements in the frequency, length, consistency, and quality of periods. Allopathy medications aid in the management and control of PCOS symptoms, whereas ayurvedic

medications are thought to be the best treatment option and offer no negative side effects.

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