



Case Study

## MANAGEMENT OF POLYCYSTIC OVARIAN DISEASE/POLYCYSTIC OVARIAN SYNDROME (PCOD/PCOS), FATTY LIVER AND CHOLELITHIASIS IN FEMALE PATIENT BY USING AYURVEDIC INTERVENTIONS: A CASE REPORT

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### ABSTRACT

Poly Cystic Ovarian Disease (PCOD), Non-Alcoholic Fatty Liver Disease (NAFLD) and cholelithiasis are the major female health issues in the modern times having significant potential to increase the chances of infertility. The allopathic treatment of these conditions relies on suppressing the symptoms only and are also not afforded by all. But in Ayurveda a holistic approach to disease is followed. An effective management of all three conditions with Ayurveda is well described with the present case study. A 40 years old Hindu non-smoking, non-alcoholic female residing Noida presented to the OPD of Shuddhi Ayurveda Clinic, Jeena Sikho Lifecare Pvt. Ltd. Noida on 12 September, 2020. The patient was presented with her previous ultrasonographic reports which indicated the worst condition of her liver along with polycystic ovary and gall bladder stone. After Ayurvedic treatment for the duration of almost 10 months, a remarkable change in the liver was observed with reduced values of liver parameters. The ultrasonic reports of after treatment showed negligible presence of ovarian cyst and bladder stone showing effectiveness of Ayurvedic treatment in the management of these diseases without any side effect.

### INTRODUCTION

Polycystic ovarian disease/Polycystic ovarian syndrome (PCOD/PCOS)- as the name indicates, is the term used to refer gynaecological disorder that describes the signs and symptoms related to ovarian dysfunction. It is a common endocrine disorder affecting women of reproductive age. It is a disease that is mainly characterized by hormonal imbalance and thus the release of the mature egg is failed and that results in multiple follicles accumulation in the ovaries without ovulation. The major symptoms of the disease are cystic acne, cephalic hair loss, mild facial hirsutism, oligomenorrhea, amenorrhea, enlarged ovaries, signs of hyperandrogenism in combination with ovarian failure and infertility and severe generalized hirsutism.<sup>[1-5]</sup>

The association of polycystic ovaries with hirsutism and amenorrhea was first recognized by Stein and Leventhal, who described PCOS for the first time in the year 1935 therefore, called as Stein Leventhal Syndrome<sup>[6]</sup>. According to the European Society for Human Reproduction and Embryology and the American Society for Reproductive Medicine (ESHRE/ASRM) PCOD is the presence of two out of three subsequent criteria i.e., (i) oligo- and/or anovulation; (ii) hyperandrogenism (clinical and/or biochemical); (iii) polycystic ovaries, with the exclusion of different aetiologies<sup>[7,8]</sup>. Polycystic ovaries have multiple micro-cysts located below the ovarian surface and give the appearance of string of pearls that are interspersed by an overgrowth of stroma. In PCOD, there is a significant increase in the antral follicle count, serum AMH (anti-mullerian hormone) and luteinizing hormone/follicular stimulating hormone (LH/FSH) ratio <sup>[9]</sup>. PCOD is affecting around 12–21% women and has become the leading cause of infertility in females<sup>[10,11]</sup>. As per WHO reports on PCOD in the year 2010, it affected 116 million women worldwide i.e. 3.4% of women<sup>[12]</sup>. In Ayurveda, PCOS is categorized under *Kapha*

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disorders/*Doshas* which block the *Vata* and *Pitta* components of the body. *Kapha dosha* is described as the *Mala* (waste) produced by *Rasa dhatu* and *Raja* i.e., endometrium whereas the menstrual blood is the secondary element of *Rasa dhatu* i.e., *Updhatu* of *Rasa dhatu*. Therefore, PCOD represents an equal participation of the *Dosha*, *Dhatu* and *Upadhatu*. In a normal scenario *Vata* is actively involved in the follicle movement during the ovarian cycle. But in PCOS, this cycle is disturbed by *Kapha* due to its excessive accumulation which reduces the digestive fire and produce *Ama* (undigested food) and that ultimately blocks the *Vata* and *Pitta* channels. It causes improper enzymatic reactions that leads to incomplete metabolism and hormonal imbalance which causes hyperinsulinemia and hyperandrogenism and hence ovarian abnormalities like polycystic ovaries, *Granthiadhara* (cystic swelling), *Arbudha* (glandular swelling and tumour formation), *Abeejata* (anovulation) and *Arjaska* (amenorrhoea/oligomenorrhoea), and *Apanavayudushti* or *Margavarodhjanya* (obstructed channels and suppression of transformation process) occur. *Apanavayu* (the thing that needs to be passed away) in *Artavavahasrota* (reproductive system) becomes immovable due to *Kapha* and *Ama* which results in ovarian cyst formation and release of white sticky and heavy material<sup>[13-15]</sup>. There are several root causes of PCOD such as substantial hereditary factor which is often passed from the mother to daughter and modern lifestyle habits<sup>[16]</sup>. Health conditions such as thyroid dysfunction, hyperprolactinemia, androgen-secreting tumors, Cushing's syndrome (excess cortisol levels), and congenital adrenal hyperplasia all are deeply associated with PCOD pathogenesis. Exposure to chemicals whether intentional (perfume, sunscreen, deodorant, hair dye, household cleaning agents, chemotherapeutics etc) or accidental (pesticide, vehicle exhausts, industrial pollutants etc) also increases the risk of PCOD. In modern times people are more concerned about their hygiene and personal care so they are more into products like perfume, sunscreen, deodorant, hair dye but these innocuous-seeming hygiene products are major endocrine disruptors as they are comprised of phthalates, parabens, isopropanol, glutaraldehyde, benzophenones, oil of turpentine, metals (nickel sulphate, cobalt chloride), benzophenones etc. Packaged and canned foods usually contain a chemical bisphenol A (BPA), leading to the issues related to the reproductive system and PCOD is one among them<sup>[17-20]</sup>. Another leading female health issue is Cholelithiasis or gallstone, a common gastrointestinal disorder which is characterized by crystalline deposits in the

gallbladder. It is a frequent health problem in developed countries affecting almost 10-20% of the adult population worldwide. Women are more prone to gallstone as G-protein-coupled receptor 30 (GPR30), an estrogen receptor cause lithogenic effect of progesterone and estrogen<sup>[21-25]</sup>. The major risk factors of gallstone are aging, obesity, hyperlipidemia, diabetes and issues related to reproductive system<sup>[26]</sup>. Gall stones are categorized into two types i.e., gallstones contain cholesterol and pigment stones formed of calcium bilirubinate. The former is again of two types i.e. cholesterol stones (90- to 100 percent cholesterol) and mixed stones (50- to 90 percent cholesterol) and is more common with 80% prevalence rate. The major causes of gall stone are high caloric and high fat diet, obesity, female sex hormones, increasing age, gallbladder hypo motility, clofibrate therapy and genetic factors<sup>[27]</sup>. Also the rate of alcohol-associated liver disease is increasing day by day. As per the reports, obesity and diabetes are the most common risk factors of non-alcoholic fatty liver disease (NAFLD) and hepatocellular carcinoma. The degree of obesity is directly proportional to the severity of NAFLD<sup>[28,29]</sup>. In Ayurveda it is termed as *Yakrit vikara* which is caused by *Atisantarpana* i.e., over nutrition whereas altered food habits (*Mandagni*). The major symptoms of the disease mentioned in Ayurveda are *Dorbalya* (weakness), *Aruchi* (anorexia), *Avipaka* (indigestion), *Varcha graha* (retention of stool), *Trishnadhikya* (excessive thirst), *Mandagni* (indigestion), *Udarshool* (abdominal pain) and *Tamapravesh* (anxiety). Ayurvedic treatment practices of liver related diseases are widely recognized due to the association of least drug toxicity as compared to the modern medicines<sup>[30,31]</sup>.

### Case Report

A 40 years old Hindu non-smoking, non-alcoholic female residing Noida presented to the OPD of Shuddhi Ayurveda Clinic, Jeena Sikho Lifecare Pvt. Ltd. Noida on 12 September, 2020 with the chief complaints of hyper emesis, gastric trouble, constipation, joint stiffness, fatigue, abdominal pain, hair-fall, back-pain and recurrent fever. The patient was suffering from PCOD, gall bladder stone and fatty liver from the last one year. She was on allopathic treatment for the same conditions but didn't get any relief so she decided to switch to Ayurveda for better and reliable treatment. Therefore, she visited the OPD of Shuddhi Ayurveda Clinic, Noida. She came with her previous ultrasound report which indicated the signs of fatty liver, ovarian cyst and gall bladder stone of 2-3mm size. Her liver function test report indicated the worst condition of the liver with extremely raised values of each of the liver

parameter especially aspartate aminotransferase (SGOT), alanine transaminase (SGPT), alkaline phosphatase and gamma glutamyl transferase (GGT) with values 473.8, 722.34, 137.02 and 222.4mg/dl respectively. Her treatment period was from 12 September 2020 to 10 July 2021 which resulted in excellent outcomes with almost normal range of liver parameters.

### Patient Information

#### Presenting Complaints

Hyper emesis, gastric trouble, constipation, joint stiffness, fatigue, abdominal pain, hair-fall, back-pain and recurrent fever.

### Medical, family and psychosocial history including genetic information

The patient was represented with neither any kind of addiction nor family history of any such disease.

#### Relevant past interventions and their outcomes

There was no any previous surgical history of the patient but she was represented with previous history of recurrent vomiting and gastritis.

#### Clinical Assessment

The patient was clinically assessed by *Jeebha pariksha* (tongue examination), *Naadi pariksha* (pulse examination), *Darshan pariksha*, *Prashan pariksha* and *Givha pariksha*.

**Table 1: Jeebha Pariksha (Tongue Examination)**

1 <sup>st</sup> Month	2 <sup>nd</sup> Month	3 <sup>rd</sup> Month	4 <sup>th</sup> Month
Thick yellow dark coated with cracks	Mild coating yellowish, discoloration, cracks absent.	No coating No cracks	No coating No cracks

**Table 2: Naadi Pariksha (Pulse Examination)**

Naadi	1 <sup>st</sup> Month	2 <sup>nd</sup> Month	3 <sup>rd</sup> Month	4 <sup>th</sup> Month
Vata	Moderate++	Average+	Average+	Average+
Pita	Severe+++	Moderate++	Average+	Average+
Kapha	Moderate++	Average+	Average+	Average+

**Indications:** (+++) High force (*Bala*), (++) Moderate force (*Bala*), (+) Low force (*Bala*).

#### Dashvidh Pariksha

*Prakriti* (physical constitution): *Pitta kapha prakrati*

*Vikruti* (pathological condition):

- *Dosha* (deranged regulatory functional factors of the body):- *Pitta* and *kapha prakopa*
- *Dushya* (deranged major structural components of the body):- *Rasa* and *Rakta, Medadusti*
- *Sthana* (site of localization):- *Yakrut, Pittashya, Garbhshya*
- *Agni* (digestive/metabolic factors):- *Mandagani*
- *Srotas* (structural or functional channels):- *Rasavaha shrotas, Medavaha shrotas, Mutravaha and Raktavaha shrotas*
- *Avastha* (stage of disease):- *Jirna avastha*
- *Rogamarga* (pathway of disease manifestation):- *Abhyantar marga*
- *Sadhyaasadyata* (prognosis):- *Kriccha sadhya aswastha*

*Sara* (excellence of tissues):- *Madhyam sara*

*Samhanana* (body compactness):- *Madhyam samhanna*

*Pramana* (measurements of body parts):- *Madhyam praman*

*Satmya* (homologation):- *Avra satmya*

*Sattva* (mental constitution):- *Avara sattva*

*Aharashakti* (capacity to ingest food and capacity to digest and assimilate the food):- *Madhya*

*Vyayamashakti* (capacity to exercise):- *Avara* (poor)

*Vaya* (age) - *Yuvan avastha*

#### Laboratory Assessment

The liver function test (LFT) and Ultrasonography reports of before and after treatment (refer figure 1 and 2) showed a huge variation and indicated the positive outcomes. Test results are compiled in table no. 3

**Table 3: Liver Function Test Results for the case reports**

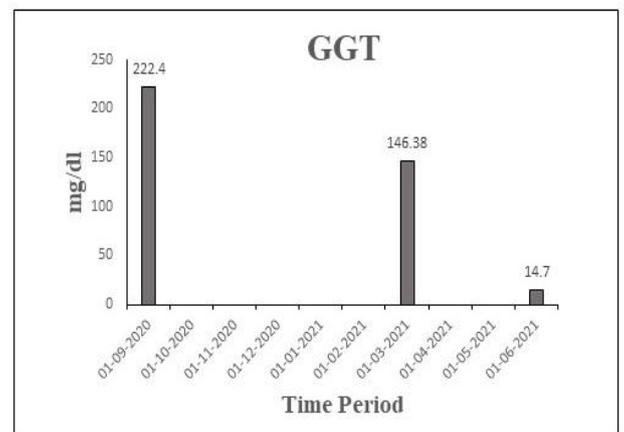
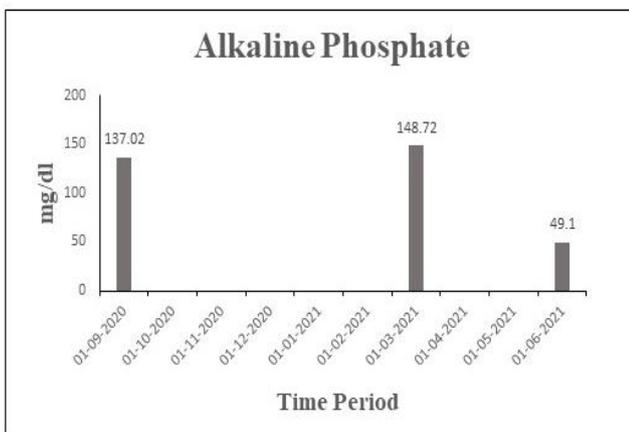
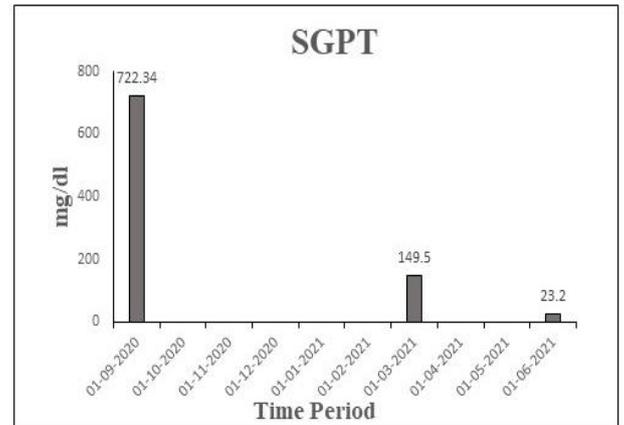
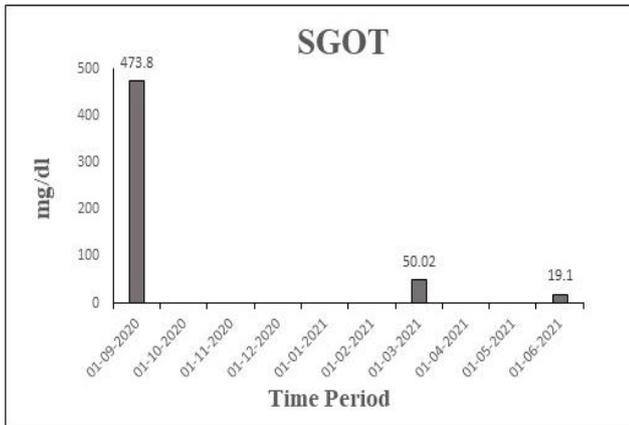
Test name	10/09/2020	05/03/2021	10/06/2021
Bilirubin Direct (mg/dl)	2.01	0.26	0.26
Bilirubin Total (mg/dl)	3.21	0.85	0.83
Bilirubin Indirect (mg/dl)	1.7	0.59	0.57
Aspartate aminotransferase SGOT (U/l)	473.8	50.02	19.1
Alanine transaminase SGPT (U/l)	722.34	149.5	23.2
Alkaline Phosphatase (U/l)	137.02	148.72	49.1
Gamma Glutamyl Transferase GGT (U/l)	222.4	146.38	14.7
Protein Total (gm/dl)	7.94	6.8	7.7
Albumin Serum (gm/dl)	4.65	3.28	5
Serum Globulin (gm/dl)	3.29	2.88	2.7
Serum Alb/Globulin Ratio	1.41	1.28	1.85

**Follow Ups and Outcomes**

Patient was followed up after every month from the start of Ayurvedic treatment. Follow up was taken for time period of eight months. Patient was advised to follow proper diet and medicines.

**Observations and Results**

The impact of Ayurvedic intervention on liver, gall bladder stone and PCOD was effectively observed. The eight months of Ayurvedic treatment course resulted in remarkable reduction in the raised levels of major liver parameters i.e., SGOT, SGPT, alkaline phosphatase and GGT (refer figure 3). The after treatment ultrasound report showed no presence of any ovarian cyst and gall bladder stone. The patient got relief from all the associated symptoms of these diseases.



**Figure 3: Graphical representation of LFT**

## Diet

The patient was strictly advised to follow a diet plan which strictly excludes non-vegetarian food, fast food and milk based products as such kind of foods effectively aggravate the symptoms and severity of the Non Alcoholic Fatty Liver Disease and gall stone. The patient was recommended to consume low-fat and reduced-calorie diet. The patient was strictly advised to include lots of seasonal fruits and vegetables in his diet.

## Selection of Ayurvedic Treatment

Patient was administered with Ayurvedic medicines described in table no. 4 for the duration of six month of treatment.

**Table 4: Ayurvedic medicines prescribed to the patient in this case**

S.no	Ayurvedic Intervention	Form	Dose	Anupana	Mode of Action
1.	Dr. Shuddhi Powder	Powder	1 tsp twice a day	Lukewarm water	<i>Rakta shodhan, Pitta rechan, Vata anuloman</i>
2.	Dr. Immune Tablet	Tablet	Twice a day	Lukewarm water	<i>Deepan pachan, Vata shaman, Rasayan</i>
3.	Shuddhikaran Tablet	Tablet	OD	Cold water	<i>Pitta rechan</i>
4.	Shuddhi liver pitta	Syrup	Twice a day	Lukewarm water	<i>Pitta rechan, Vata anuloman,</i>
5.	Liv DS	Capsule	Twice a day	Lukewarm water	<i>Vata anuloman, Deepan pachan,</i>
6.	Liv gain		Twice a day	Lukewarm water	<i>Pittam shamak</i>
7.	<i>Yakrut shoth har vati</i>	Tablet	Twice a day	Lukewarm water	<i>Rechak, Shodhak</i>
9.	Hair care Churna	Powder	Twice a day	Lukewarm water	<i>Keshya, Dhatuposhan</i>
10.	<i>Dhatu poshak</i>	Capsule	Twice a day	Luke warm water	<i>Dhatu poshan, Asthi poshan</i>
11	<i>Divya arthri</i>	Capsule	Twice a day	Lukewarm water	<i>Vata shaman, Shoolghna</i>
12	<i>Alokik Shakti</i>	Tablet	Twice a day	Lukewarm water	<i>Rasayan, shroto shodhan</i>
13	<i>Amalpitta har</i>	Capsule	Twice a day	Lukewarm water	<i>Pitta shaman, Vata anuloman, Mrdu rechan</i>

## CONCLUSION

PCOS is a highly complex endocrine disorder. PCOS can't be correlated with a single entity in Ayurveda but has some resemblance with *Pushpaghni jatiharini*. Others are *Shandi yoni vyapad*, *Bandhya of Charak*, *Bandhya yoni vyapad of Sushruta*, *Vikuta jatiharini of Kashyap*. Along with Poly Cystic Ovarian Disease (PCOD), non-alcoholic fatty liver disease (NAFLD) and cholelithiasis are the major female health issues in the modern times having significant potential to increase the chances of infertility. With the use Ayurveda medicines and proper diet plan these conditions can be well managed and significant improvement can be observed.

## Patient Perspective

Patient was very much satisfied with this Ayurvedic treatment. She was feeling much relieved from the clinical symptoms after eight months of Ayurvedic treatment for her condition.

## Patient Consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has/have given his consent for clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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