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PCOS AND PCOD-AN REVIEW WITH SPECIAL REFERENCE TO AYURVEDA

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ABSTRACT

Background:- Polycystic Ovarian Syndrome is the most common endocrine-metabolic condition in reproductive aged women causing anovulatory infertility. This adversely affect the reproductive system by menstrual disorders, obesity, depression, insulin resistance. **Aims and Objectives:-** To understand the concept of PCOS and PCOD with special reference to Ayurveda and establishing the ayurvedic treatment regimen. **Materials and Methods:-** Literature review of modern and Ayurveda and updated information from internet. **Result:-** PCOS is the *Vata Kapha pradhana tridosha* along with vitiation of *Rasa*, *Rakta*, *Mamsa*, *Medas* and *Shukra*. The *Srotas* involved are *Rasa*, *Rakta* and *Artavavaha srotas* which eventually manifests *Anartava*, *Vandhyatva*, *Pushpagni Jataharini*. **Conclusion:-** Ayurvedic line of treatment is based on establishing balance of doshas by *Nidana-parivarjana*, *Amapachana*, *Vatanulomana*, *Artavajanaka*, *Shodhana* which can be judiciously implemented to alleviate PCOS and all associated problems.

KEYWORDS:- PCOS, Insulin resistance, *Vata kapha*, *Srotas*, *Doshas.*

INTRODUCTION

PCOS is complex endocrine disorder affecting women of reproductive age characterised by excessive androgen production and chronic anovulation. It is the commonest cause of anovulaar infertility.[1] Prevalence of PCOS in India ranges from 3.7 to 22.5 per cent depending on the population studied and the criteria used for diagnosis.[2] It is characterized by a combination of hyperandrogenism (clinical or biochemical), chronic anovulation and

polycystic ovaries. This is frequently associated with insulin resistance and obesity. It is characterized by the presence of menstrual irregularities, infertility, hirsutism, acne, hair loss, hyper androgenism, central obesity and dyslipidaemia with a higher risk of developing diabetes mellitus, endometrial hyperplasia and cardiovascular diseases.

Etiology

- Gentic basis- PCOS is multi factorial and polygenic syndromic disorder. PCOS has autosomal dominant inheritance pattern. Candidate gene approach worldwide has identified many susceptibility genes including cytochrome P1A1(CYP1A1), CYP11A, CYP17A1, CYP19[3]
- Sedentary lifestyle, consumption of junk food, oily and fried items etc.

Diagnostic criteria[4]

- NIH 1990- Must include chronic anovulation and clinical and/or biochemical signs of hyperandrogenism
- Roterdam 2003- (Two of the following 3)
  Oligo/anovulation, clinical and/or biochemical signs of hyperandrogenism, polycystic ovaries on USG.
- Androgen excess soceity 2006- Must include Oligo/anovulation, polycystic ovaries in usg and hyperandrogenism

Pathophysiology[5]

Hormonal imbalance, Hyperandrogenism and Hyperinsulinemia play an important role

- Hormonal imbalance

The hypothalmo-pituitary-ovarian axis disturbance leads to increase in LH pulse frequency resulting in increased GnRH pulse frequency, elevated LH: FSH ratio and FSH is not increased probably as a result of negative feedback of chronically elevated oestrogen levels and normal follicular inhibin.

- Hyperandrogenism

Ovarian stroma: Theca and Granulosa cells contribute to ovarian hyperandrogenism and are stimulated by Lutenizing hormone. High intraovarian androgen concentration inhibits follicular maturation whereas ovarian theca cells are hyperactive, the retarded follicular maturation results in inactive granulosa cells with minimal aromatase activity for conversion to oestrogens

- Hyperinsulinemia

Peripheral resistance to insulin by adipose tissue and increased androgen level in body, specific abnormalies of insulin metabolism where there is reduced hepatic extraction, impaired suppression of hepatic Gluconeogenesis and Abnormalities in insulin receptor signalling result in hyperinsulinemia.

Signs and Symptoms

- Menstrual irregularities- Oligomenorrhea/Amenorrhea
- Hyper androgenism-Hirsutism and Acne
- Hyperinsulenemia- Central obesity, Acanthosis nigricans
- Psycological complaints-Stress, depression

Long term consequences[6]

- Infertility- Due to Anovulation or Oligo-ovulation
- Diabetes mellitus-Insulin resistance, abnormal glucose metabolism and lipid profile
- Cardiovascular disease- Dysregulation of endothelial function, increased carotid intimal-medial thickness, and presence of coronary artery calcification.
- Endometrial carcinoma- Due to prolonged exposure of the endometrium to unopposed estrogen caused by anovulation
- Oligomenorrhea /amenorrhea-Increased androgen level can interrupt ovulation, absence of LH surge, imbalance in HPO axis and formation of fluid filled cysts on the ovaries
- Miscarriages- Impaired fibrinolysis which causes placental insufficiency,

Biochemical changes in PCOS

- LH level is elevated and the ratio LH: FSH >3:1
- Raised level of Eestradiol and Estrone
- SHBG level is reduced
- Androstenedione is elevated
- Raised serum Testosterone
- Raised fasting Insulin levels
- USG- Enlarged ovaries with string of-pearl morphology
- Laparoscopy- Bilateral polycystic ovaries

PCOD (Polycystic ovarian disorder)

PCOD is endocrinal disorder which is of less severe when compared to PCOS where ovaries contain many immature follicles which can turn into cysts. Symptoms include irregular menstruation, weight gain and facial hair growth.

Management[7]

- Women not pursuing pregnancy
- Menstual dysfunction-Combined estrogen progestin contraceptives
- Antiandrogens- Finasteride and cyproterone acetate
- Hair removal- Shaving, plucking, waxing, depilatory creams
- Women persuing pregnancy
- Ovulation induction clomiphene citrate
- Pure FSH or HMG along with HCG
- Insulin sensitisers BMI>25 Clomiphene with metformin(Metformin 500mg tid)
- Surgery
- Endoscopic cauterization or CO2 laser vapourisation
- Laproscopic ovarian drilling(LOD)

Ayurvedic view

- In Ayurveda PCOS can be corelated to *Artavakshya*(Anovulation or improper menstruation), *Nashtartava*(Anovulation), *Vandya*(Infertility caused by Anovulation), *Pushpagni jataharini*(Anovulation, improper menstruation, there is appearance of *sthula loma* and *ganda*)
- Mainly *Rasa*, *Rakta*, *Mamsa*, *Medas*, *Shukra* and *Artava* are involved-some of the symptoms include
  - *Granti* (Acharya Sushruta) - *Vritta unnata vigratita shopha*
  - *Mukhadooshika*(Acharya Sharangadhara)- *Kshudra roga*, *Dhatu mala* of *Sukra*
  - *Stoulya* (Ach. Charaka)-*Santarpanajanya rogas*
  - *Prameha* (Ach.Charaka)-*Prameha-Kapha medaja vyadhi*
  - *Athiloma* (Ach.Vagbhata)-*Dhatu mala* of *Asthi*

Lean PCOS[8]

- Small proportion of patients with lean phenotype(BMI<=25) presents with features like hyperandrogenism, polycystic ovaries and insulin resistance

- These cases usually left undiagnosed until they face infertility following marriage
- Management- Diet and lifestyle modification and pharmacological measures
- In Ayurveda there is involvement of *Vata pitta dosha* and is compared with *Ksheenartava*
- *Nidana- Pramitashana, Langhana, Adhyayana, Shoka* leading to *Karshya*(lean buttock, belly, neck)

Nidanas

Abnormal dietetics and lifestyle, abnormalities of *Artava*, abnormalities of *Beeja* and *Daiva* are the causes of various *Yonivyapads* mentioned in Ayurveda.[9] Collectively the following etiological factors emerge out of various classics as:

- ***Mithya ahar vihar*:** Abnormal diet and abnormal *Dincharya* and *Ritucharya* can be included under this heading. *Anashana, Vidahi ahara, Vishamashana, Atimadhuraahara sevana, Mamsa priya, Diwaswapna, Ratrijagarana*, not performing *Dharma, Mangalachara, Soucha, Devakriya, Veghadharana, Atichinta, Bhaya, Shoka* causes *Rasavaha srotodushti*.
- ***Pradushta artava*:** The word *Artava* refers to female sex hormones, Ovum and menstrual blood as described in various contexts. The vitiated *Artava* do not possess the *Beeja* i.e. a healthy ovum thus resulting into specific signs of PCOS.
- ***Beeja dosha*:** Abnormalities of Sperm and ovum. It may include various chromosomal and genetic abnormalities.
- ***Daiva*:** Unknown or idiopathic factors can be included in this group.

Samprapti

Due to *Nidana sevana* there is *Dosha dushya samurchana* leading to *Khavaigunya* are made evident by the manifestations

1. ***Kaphadushti*:** Vitiated *Kapha dosha* which circulates throughout the body causes *Srotorodha* leading to *Srotodushti* and thereby hampering the proper production of the *Dhatus* manifesting as the symptom of that particular *Srotas*. *Kaphadosha* having a proximity to the *Rasavaha srotas* brings about the *Rasavaha srotodushti* and also the *Medovaha srotodushti*. Also the vitiated *Kapha* hampers the normal functioning of the *Vata*.
2. ***Agni*:** *Santarpanotha nidana sevana* leads to the *Agnimandhya*, leading to *Aamannarasa*. This leads to the dushta *Rasa dhatu* formation. Due to the *Madhuratara* and the *Atisnigdha* property of the same, having close effinity to the *Medodhatu* vitiates it. *Agni*

in terms of *Dhatwagni* level causes vitiation and leads to different conditions.

3. **Relation with *artavavaha srotas*:** Vitiated *Kapha dosha* blocks the physiological function of *Apana vata* that manifests as *Anaatava*.

Poorvaroopa*- Artavadushti, Gourava, Aruchi, Agnimandhya.*

Roopa

- *Rasadushti- Artavadushti, Alasya, Gourava*
- *Raktadushti- Asrigdhara, Vyanga*
- *Mamsadushti- Granthi, Ganda udara vriddi*
- *Medhodushti- Athisthoulya, Spik stana udara lambhana*
- *Shukradushti- Shmashru, Yuvana pidaka*

Chikitsa

Treatment mainly includes *Nidanaparivarjana, Ahara vihara* and *Aoushadhi's*

- Avoid the disease causing factors like junk food, cold drinks, sedentary lifestyle etc
- Acharya Sushruta has mentioned *Agneya dravya prayoga* in *Artava kshaya* like *Masha, Tila, Kulatha, Matsya, Sura*[10]
- Yogasanas like *Suryanamaskara, Sarvangasana, Paschimottasana, Matsyasana* will help in improving lipid, glucose and insulin resistance values[11]
- Considering PCOS as *Vyadhi sankara*; *Granthi chikitsa*, *Prameha chikitsa*, *Artava vyapath chikitsa* is followed. For the manifestation on *Twak- Rasa*, *Rakta dushti chikitsa* can be adopted.
- *Panchakarma- Vamana* for *Kapha chedana* and *Avarana chikitsa*, *Virechana* for *Kaphapitta nissarana* and *Vatanulomana*. *Basti* normalizes the function of *Apana vata* leading to normal *Rajah pravritti* and normal *Beeja nirmana*. *Nasya* may stimulate olfactory nerves and limbic system, which in turn stimulates GnRh.[12]

CONCLUSION

PCOS is becoming a burning issue in the present era and it is mainly due to combination of genetic, environmental, social and pshycological factors. As it is often associated with excessive weight gain, a healthy diet and appropriate physical activities are also found to be effective.While adopting modern medicine like hormonal pills, clomiphene citrate, antiandrogens, etc having its own limitations and patient have to face side effects like weight gain, drug reaction, headache, risk of thromboembolism[13] etc. Ayurveda on other hand looks

deeply into the individual constituents and helps to come out of PCOS and it's related symptoms. It also helps to lower the insulin resistance more efficiently there by favoring ovulation which is one of the prime factors for the maintenance of fertility.

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