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Prevalence of polycystic ovary syndrome among reproductive females in Padgampora village of Pulwama, J&K, India

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Abstract

Background: Polycystic ovary syndrome (PCOS) is a problem with hormones that affects women during their child bearing years (ages 15-44). 2.2 to 26.7 % of women in this age group have PCOS. It affects a woman's ovaries, the reproductive organs that produce estrogen and progesterone-hormones that regulate the menstrual cycle. The ovaries also produce a small amount of male hormones called androgens. WHO estimates that PCOS has affected 116 million women (3.4%) worldwide in 2012.

Objectives: To determine the prevalence of PCOS among reproductive females in Padgampora Village of District Pulwama, J&K.

Methods: A descriptive study was conducted in Padgampora Village of District Pulwama, J&K by Purposive Sampling technique & Sample size was 40 reproductive females. Participants who were willing to participate in the study, available at the time of data collection & between age group of 15-45 years were included in study. An informed consent was obtained from the subjects. The data was compiled for Descriptive Statistical tests.

Results: Most of the females (42.5%) with PCOS were in the age group of 15 - 25years. Clinical manifestations viz; Irregular cycle (47.5%), Hirsutism (27.5%), Acne (32.5%), Obesity (52.5%), Alopecia (7.5%), Infertility (5%), depression (17.5%) were seen in the study subjects.

Conclusion: Awareness to the general community especially younger females regarding the PCOS, early diagnosis and its prevention will reduce the long term health complications associated with PCOS.

Keywords: PCOS, adolescent girls, prevalence

1. Introduction

Polycystic ovary syndrome (PCOS) is a complex disease with heterogeneous clinical presentation, characterised by chronic anovulation and hyperandrogenism [1]. It is a hormonal disorder common among women of reproductive age. Women with PCOS may have infrequent or prolonged menstrual periods or excess male hormone (androgen) levels with prevalence ranging from 2.2% to 26.7% in that age group [2].

In India, the prevalence is gradually increasing. In Indian Express in 2013, it was published that PCOS becoming 'epidemic' in Bangalore city, because of the lifestyle that people have adopted. Almost all foods are packed with chemicals that lead to hormonal imbalance. The etiology of PCOS is not completely understood and there is no known cause [3].

PCOS is associated with reproductive disorders and cardiovascular disturbances including insulin resistance, obesity, hypertension, diabetes and dyslipidemia [4]. Current evidence suggests that PCOS is a polygenic, multifactorial disorder, and that its pathogenesis and clinical presentation are influenced by both environmental risk factors and genetic susceptibility; however, a causal genetic pathway has not been identified until the present moment [5]. Among environmental factors, lifestyle aspects such as an inappropriate diet and sedentary behaviour, which contribute to central adiposity and metabolic co morbidities, play an important role in the pathogenesis of PCOS [4]. Information regarding the prevalence and severity of PCOS is still lacking in many areas of the world, especially in low-income and middle-income regions.

PCOS has a very high percentage of individuals who remain undiagnosed when visiting their Doctor, estimated to be as high as 75% [6]. This is likely due to variability of patient presentation and lack of provider knowledge. The benefit of capturing more of these patients would be linkage to care, increased screening for co morbidities, and overall improvement in

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patient care. Giving a patient the diagnosis of PCOS makes the patient aware of possible fertility concerns, dysfunctional bleeding, endometrial cancer, obesity, diabetes, dyslipidemia, hypertension, and theoretical increased risk of cardiovascular disease [7]. Since PCOS could be genetic, it may bring awareness to family members and future children.

Objective of the study
To determine the prevalence of PCOS among reproductive females in Padgampora Village of District Pulwama, J&K.

2. Material and Methods
A descriptive study was conducted in Padgampora Village of District Pulwama; J&K. Study duration was from September, 2019 - October, 2019. Study population comprised of 40 reproductive females were included in the study by using Purposive sampling technique. The females who were pregnant and who did not give consent were excluded from the study.

Setting
The study was conducted in Padgampora Village of District Pulwama, Jammu and Kashmir India. Padgampora is a village in Awantipora Tehsil in Pulwama District of Jammu and Kashmir, India. It is located 11 km towards East from District headquarters Pulwama. 25 kms from UT capital Srinagar. The people of Padgampora depend mostly on Agriculture but the main business of people is tractor trading. As of 2011 India census, Padgampora had a population of 6,250. Males constitute 59% of the population and females 41%. Padgampora has an average literacy rate of 71.3%, higher than the National average of 59.5%; with 65.1% of the males and 48.8% of females literate.

Data collection
Prior to data collection, the investigator familiarised herself with the subjects and explained to them the purpose of the study. The investigator requested the participant's full co-operation and assured them the confidentiality of their response. An informed consent was obtained from the subjects. Once the subject was at ease and comfortable, detailed history about menstrual cycle and demographic profile was taken. General physical examination especially their height in meters and weight in kilograms for body mass index, hirsutism, acne and any other abnormality was noted. The data was compiled for data analysis. The investigator expressed gratitude to all clients for their participation.

3. Results
3.1 Demographic profile of study population
Most of the females (42.5%) were in the age group of 15 - 25years, 57.5% were having education above 12th standard, 92.5 % were self-employed, 45% had family income above Rs 15000/per month, 82.5% were un married, all 100% were consuming mixed diet and junk foods, 57.5% were having body weight in the range of 55-69kgs and 62.5 % were have height in the range of 156-161cms.

3.2 Distribution of clinical signs and symptoms among study participants

Table 1: Distribution of clinical signs and symptoms among study participants

S. No.	Symptoms	Frequency	Percentage
1	Irregular cycles	19	47.5%
2	Hirsutism (*FG score ≥8)	11	27.5%
3	Acne	13	32.5%
4	Obesity	21	52.5%
5	Alopecia	3	7.5%
6	Infertility	2	5%
7	Depression	7	17.5%

*FG score: Ferriman–Gallwey scoring

The above table depicts that major clinical manifestation of PCOS was obesity (52.5%) followed by irregular cycles, observed in 47.5% subjects.

4. Discussion
This study was conducted to determine the frequency of PCOS among young reproductive females in the age group of 15-44 years. Most of the females (42.5%) with PCOS were in the age group of 15 - 25years. Clinical manifestations viz; Irregular cycle (47.5%), Hirsutism (27.5%), Acne (32.5%), Obesity (52.5%), Alopecia (7.5%), Infertility (5%), Depression (17.5%) was seen in the study subjects. A study conducted on Saudi girls, the estimated prevalence of PCOS was observed to be 53.7% which is strikingly higher. One of the explanations may be high incidence of obesity in Saudi Arabia which has an established association with PCOS [8]. A Study was conducted in Iran on 19, 226 women aged between 10-45 years. The prevalence of PCOS based on National institute of child health and human disease of the U.S was, 6.8% (95 % CI: 4.11-8.5), based on Rotterdam was 19.5% (95 % CI: 2.24-8.14), and based on ultrasound was 4.41% (95% CI: 5.68-4.14). Also, the prevalence of hirsutism was estimated to be 13%, acne 26%, androgenic alopecia 9%, menstrual disorders 28%, overweight 21%, obesity 19%, and infertility 8% [9].
According to a prospective study conducted by Nidhi *et al.*, on 460 girls aged 15-18 years in a Residential college in Andhra Pradesh, South India, the prevalence of PCOS was found to be 9.13% in adolescents [10].
Williamson *et al.* in their study reported the prevalence of PCOS between 2.2-26% [11].
The possibility of conducting such community based study justifies the need to fascinate this effort to get an overall estimate of the disorder in a diverse sociocultural and economic background, providing an opportunity for early detection and prevention of morbidities among adolescents and young women in India.

5. Conclusions
Based on the observation it is concluded that the prevalence of PCOS is increasing gradually in this region and it may be a major health concern in future. Hence, early diagnosis and intervention will reduce the long term health complications associated with PCOS.

Health personnel should provide awareness to the general community especially younger females regarding the prevention of PCOS. Also Counselling for adolescents should be included in the curriculum which will provide awareness towards the disorder and lifestyle modification.

6. Recommendations
Further studies should be conducted on a larger sample size. Longitudinal studies must be carried out to determine the long-term effects of PCOS on female health.

7. References
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