



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2020; 6(6): 292-295
www.allresearchjournal.com
Received: 21-03-2020
Accepted: 23-04-2020

Dr. Rachel Bashir
Postgraduate Scholar,
Department of Community
Medicine Government Medical
College, Srinagar, Jammu and
Kashmir, India

Dr. Rebecca Bashir
Postgraduate Scholar,
Department of Obstetrics and
Gynaecology, Government
Medical College, Srinagar,
Jammu and Kashmir, India

Dr. Kausar Sideeq
Senior Resident, Department
of Community Medicine,
Government Medical College,
Srinagar, Jammu and
Kashmir, India

Dr. SM Salim Khan
Professor and Head,
Department of Community
Medicine, Government Medical
College, Srinagar, Jammu and
Kashmir, India

Dr. Muneer Masoodi
Ex-Professor Professor and
Head, Department of
Community Medicine,
Government Medical College,
Srinagar, Jammu and
Kashmir, India

Corresponding Author:
Dr. Rachel Bashir
Postgraduate Scholar,
Department of Community
Medicine Government Medical
College, Srinagar, Jammu and
Kashmir, India

Prevalence of polycystic ovarian syndrome in women of different age groups in Hazratbal area of Srinagar by ultrasonographic evaluation – hospital data based study

Dr. Rachel Bashir, Dr. Rebecca Bashir, Dr. Kausar Sideeq, Dr. SM Salim Khan and Dr. Muneer Masoodi

Abstract

Background: Polycystic ovarian syndrome (PCOS) is the most common endocrine disorder among women of reproductive age groups and is defined as a hormonal disorder characterized by the presence of at least one polycystic ovary (presence of multiple cysts) accompanied by ovulatory dysfunction and excessive secretion of androgens. PCOS is a major public health concern in terms of a frustrating experience for women and a challenging complex syndrome for clinicians. Globally, prevalence estimates of PCOS are highly variable, ranging from 2.2% to as high as 26% of this age group depending on how it is defined.

Objective: Prevalence of PCOS in different age groups of women as revealed by USG pelvis/abdomen of women who attended the hospital OPD in Hazratbal area of Srinagar.

Methods: It was a hospital data-based prevalence study. For this study, hospital data was taken to see the prevalence of PCOS among patients with different gynecological complaints. The data for this study was extracted from USG record of hospital in Hazratbal area of Srinagar. The abdominal and pelvic sonographic reports of all women irrespective of pathology were taken. A total sample size of about 900 was estimated assuming a prevalence of 10% and precision of 2% at 95% confidence level and non-response rate of 10%. 900 USG reports were evaluated and the prevalence of PCOS was observed.

Results: Out of 900 patients 400 had normal pelvic scan, 90 patients i.e. 10 % of the patients had PCOS and remaining 410 patients had different pelvic pathology other than PCOS. Maximum prevalence of PCOS (i.e., 5.0%) was found in the age group of 15-24 years. This was followed by observed prevalence in age group of 25-34 years (i.e., 4.8%). The observed prevalence in the age group of 35-44 years was only 0.2% (Table 2). The overall prevalence in under study age group was found to be 10%. No patients with PCOS were found above the age of 45 years.

Conclusion: The prevalence of PCOS is increasing gradually in Kashmir and it a major health concern in future. Hence, early diagnosis and intervention will reduce the long term health complications associated with PCOS.

Keywords: Parental attitude, participation, sports, girls

Introduction

Polycystic ovarian syndrome (PCOS) is the most common endocrine disorder among women of reproductive age groups and is defined as a hormonal disorder characterized by the presence of at least one polycystic ovary (presence of multiple cysts) accompanied by ovulatory dysfunction and excessive secretion of androgens ^[1]. PCOS is a major public health concern in terms of a frustrating experience for women and a challenging complex syndrome for clinicians ^[2]. Globally, prevalence estimates of PCOS are highly variable, ranging from 2.2% to as high as 26% of this age group depending on how it is defined ^[3, 7]. Azziz R ^[8] reported that it effects about 6-8% of the women in the reproductive age group. In India the prevalence rate of PCOS varies from region to region. As per study conducted by Nidhi *et al.* ^[9] the prevalence of PCOS was found to be 9.13%. Gupta *et al.* ^[10] reported prevalence of 8.2% in Bhopal. It is one of the leading causes of poor fertility ^[11].

PCOS is associated with a wide spectrum of presenting features, including anovulation, obesity and abnormal facial and skin hair growth (Hirsutism) [12, 13]. Women with PCOS are at an increased risk for infertility, preeclampsia, early pregnancy loss, and endometrial cancer. Moreover, because of the association of PCOS with insulin resistance, evidence suggests that women with PCOS are at an increased risk for developing type-2 diabetes, dyslipidemia, hypertension, and heart disease [13]. The cysts are not harmful but lead to hormone imbalances [15]. Risk factors include obesity, not enough physical exercise, and a family history of someone with the condition during this pubertal transition, several features may be in evolution and thus many findings may be transitory which stabilize later during adolescence [16]. Early diagnosis and treatment can help control the symptoms and prevent long-term problems [17]. There is no cure for PCOS, but controlling it lowers risks of infertility, miscarriages, diabetes, heart disease, and uterine cancer. Behaviour and life style modifications are important part of treatment for PCOS [18]. Women's with this peculiar syndrome experiences complex of symptoms including distress, depression, anxiety which affect quality of life of patients and definitely accounts for significant healthcare costs [19]. Diagnosis of PCOS is now largely based on the Rotterdam criteria, which are inclusive of the original National Institutes of Health (NIH) criteria and require two of three key features: oligo- or anovulation, clinical and/or biochemical hyperandrogenism and polycystic ovaries on ultrasound [20, 21, 22]. Polycystic ovaries 12 or more follicles measuring 2-9 mm in diameter with or without ovarian volume >10 ml [20, 21, 23]. In approximately 20% of the cases, it may be incidentally found on ultrasound examination in asymptomatic patients [24]. In most of time dilemma of diagnosis and treatment modalities exists. Each time they get treated for isolated morbidities, further delaying the diagnosis and complicating the treatment of this multidimensional syndrome. In Kashmir the data related to PCOS is limited to a very few studies to the best of my knowledge.

Aims and Objectives

This study focuses on the prevalence of PCOS in different age groups of women as revealed by USG pelvis/abdomen of women who attended the hospital OPD in Hazratbal area of Srinagar.

Methodology

It was a hospital data-based prevalence study. For this study, hospital data was taken to see the prevalence of PCOS among patients with different gynecological complaints. The data for this study was extracted from USG record of hospital in Hazratbal area of Srinagar. This Hospital is located in the field practice area of Govt. Medical College Srinagar. This hospital has been recently upgraded to the level of Subdistrict Hospital. This hospital is catering a total population of about 85000 as per records available with Block Medical Officer in 2017. Inclusion criteria: The abdominal and pelvic sonographic reports of all women in the age group of 15-65 years irrespective of pathology were taken. A total sample size of about 950 was estimated assuming a prevalence of 10% and precision of 2% at 95% confidence level and non-response rate of 10%. However only 900 USG reports were available for evaluation and the prevalence of PCOS was observed. So for this study, 900

USG reports of all women in the age group of 15-65 were taken for evaluation. The female patients were scanned for pelvic pathology. Sonologist visualized the ovary and reported. The recorded patients were then divided into five age groups with class intervals of 10 years, starting from 15 years and prevalence of PCOS was observed in the different age groups. This study was conducted for a period of 3 months from January 2017 to March 2017. Block Medical Officer was informed about the study. Ethical clearance was obtained from the ethical committee of Govt. Medical College, Srinagar.

Results

Data was analyzed statistically by using SPSS Ver. 23. Out of 900 patients 400 had normal pelvic scan, 90 patients i.e. 10% of the patients had PCOS and remaining 410 patients had different pelvic pathology other than PCOS (Table 1 and Table 2).

Table 1: USG findings

USG report of Patients	No. of patients	Percentage%
Normal pelvic scan	400	40%
PCOS	90	10%
Other pelvic pathology	410	41%
Total	900	100

Table 2: Age wise distribution of women with PCOS

Age (years)	No of women with PCOS	Percentage %
15-24	50	5.0%
25-34	48	4.8%
35-44	2	0.2%
45-54	0	0%
55-64	0	0%
Total	90	10%

Age-wise Prevalence: On age distribution analysis, it was observed that maximum prevalence of PCOS (i.e., 5.0%) was found in the age group of 15-24 years. This was followed by observed prevalence in age group of 25-34 years (i.e., 4.8%). The observed prevalence in the age group of 35-44 years was only 0.2% (Table 2). The overall prevalence in under study age group was found to be 10%. No patients with PCOS were found above the age of 45 years.

Discussion

As we know PCOS is a common endocrine disorder which affects women of all age groups particularly women in reproductive age group. This study was conducted to find out the prevalence of PCOS in women of different age groups who attended the hospital in Hazratbal area of Srinagar as revealed by USG records of the hospital. From our study we found the prevalence of PCOS among the female patients was 10%. The prevalence was more in the age group of 15-24 years i.e. 5% followed by 4.8% in the age group of 25-34 years and least i.e. 0.2% in the age group of 35-44 years. Tabassum K [25] conducted a similar study in a hospital in Bangalore where she found the prevalence of PCOS among the women was 10%. She also reported PCOS prevalence of 4.8% in the age group of 15-24 years and 4.4% in the age group of 25-34 years and 0.8% in the age group of 35-44 years respectively which is close to the observations in our study. According to a prospective study conducted by Nidhi *et al.* [9], 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. As per study conducted by Joshi B *et al.* [26] among adolescent and young girls in Mumbai, India the prevalence of PCOS was reported to be 22.5%. Gill H *et al.* [27] reported a prevalence of 3.7% in age group of 18-25 years in North India. According to an ovarian ultrasonographic study, the prevalence has been reported to be 4.0-11.9% in the community from three different countries [28]. In one community-based prevalence study, using the Rotterdam criteria it was found that about 18% of women had PCOS and that 70% of them were previously undiagnosed¹. Similarly, another study conducted by Williamson *et al.* [29] reported that PCOS women of different ethnicity presented with different clinical manifestations. Community-based screening among Asian population found prevalence of PCOS among 6.3% of reproductive age women aged 15-45 years in Sri Lanka [30] and 5.6% in China [31]. Globally, prevalence estimates of PCOS are highly variable, ranging from 2.2% to as high as 26% [3, 4, 5, 6, 7]. These variations in prevalence are due to difficulties in hormonal evaluation and lack of consensus on diagnostic criteria [26, 3, 7]. For diagnosis of PCOS, ovarian ultrasonography and blood tests have to be done in the follicular phase [20, 22]. This limits large epidemiological studies in the community.

Conclusion

It was observed that PCOS was an age-related disease and the incidence tends to decrease with age. It was concluded that the prevalence of PCOS is increasing gradually in Kashmir and it a major health concern in future. Hence, early diagnosis and intervention will reduce the long term health complications associated with PCOS. Health education and awareness regarding the disorder should be provided to the women population.

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