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ORIGINAL ARTICLE

Hospital-based prevalence of polycystic ovarian syndrome among Omani women



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KEYWORDS

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Abstract *Background:* Polycystic ovarian syndrome (PCOS) is considered to be one of the most common endocrine disorders among women of reproductive age. It is known to be one of the main causes of infertility. The worldwide prevalence is estimated to be 6–7%; however, the country-specific prevalence estimates vary extensively. In Oman, the prevalence of PCOS is still unknown.

Objective: This study aimed to determine the hospital based prevalence of PCOS among Omani women of reproductive age group of 12–45 years who attended the gynecology clinic in a tertiary hospital in Oman.

Materials and methods: This is a retrospective cross-sectional study that included all cases of PCOS that presented at Sultan Qaboos University Hospital (SQUH) from July 2006 to December 2010. Data were collected from patients' electronic health records available in SQUH. Diagnoses of PCOS were made according to the Rotterdam criteria. Prevalence estimates were standardized to the mid-year population of Omani women in year 2009.

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Results: A total of 255 PCOS cases were enumerated among 3644 women who attended Gynecology outpatient department, indicating a hospital based frequency of 7.0%. The overall prevalence of PCOS per 1000 patients in 2010 was 2.8% [95% confidence intervals (95%CI) 0.7, 9.6]. Our study revealed a high prevalence of PCOS among women in the age group of 25–34 years. The highest prevalence was in the Muscat region (42%) followed by Dhakliya and Al Batinah regions.

Conclusions: This study shows the prevalence of diagnosed PCOS cases among women in Oman is similar to that of other countries. It highlights the need for future research to carry out a population-based assessment of PCOS prevalence.

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1. Introduction

Polycystic ovarian syndrome is a genetically complex endocrine disorder (1) and one of the most common endocrine disorders in women of the reproductive age of 12–45 years (2). Worldwide, PCOS affects up to 6–7% of this population (3).

The classical clinical features of PCOS include oligo- or anovulation, obesity and hyperandrogenism which results from excess secretion of androgen (1). Hyperandrogenism leads to clinical features of PCOS that include acne, hirsutism, and alopecia (4). Although PCOS is the most common endocrine disorder in a reproductive age group of women, its prevalence is highly variable, ranging from 2.2% to 26%. (5) The variations in reported PCOS prevalence rates are due to the difficulty of defining PCOS as various diagnostic criteria are used. In addition, there is large variability in the presentation and symptoms in this syndrome". According to the National Institutes of Health (NIH) consensus criteria, women are considered to have PCOS if they present with a combination of chronic oligo- or anovulation and clinical or biochemical signs of hyperandrogenism, with the exclusion of related disorders. However, the Rotterdam criteria suggested the addition of a third criterion – the presence of polycystic ovaries – as well as a statement that any two of the three criteria are sufficient for a positive diagnosis of PCOS (6). In contrast, the Androgen Excess Society (AES) criteria depend on the presence of hyperandrogenism as a central feature of the disease in combination with oligo-anovulation and/or polycystic ovaries, again with the exclusion of related disorders from other causes (5). Some studies have shown that PCOS is associated with diabetes, insulin resistance and obesity (7).

The prevalence of PCOS has been determined among women in different countries. A study was conducted in China and demonstrated a 2.2% prevalence of PCOS (8). Another study conducted in Mexico had demonstrated a 6% prevalence of PCOS among women of reproductive age according to National Institute of Health criteria (9). In addition a prospective study was conducted in unselected Caucasian women from Spain and demonstrated a 6.3% prevalence of PCOS (10).

However there are no published reports via Pubmed literature about the prevalence of PCOS among Omani women of reproductive age group. This study aimed to determine the hospital based prevalence of PCOS among Omani women as well as the distribution of PCOS among different age groups and different regions of Oman.

2. Methods

This was a retrospective cross-sectional descriptive study conducted in Sultan Qaboos University Hospital (SQUH) from

July 2006 to December 2010. The target population consisted entirely of women aged in the reproductive age group from 12 to 45 years who had been formally diagnosed with a PCOS according to Rotterdam criteria (5). Ultrasound examination was performed either transvaginally in women who were sexually active or transabdominally for those who were not sexually active on cycle day 3 to cycle day 7. Ultrasound diagnostic criteria for PCOS were enlarged ovaries with an increased stroma and the presence of 12 or more follicles in each ovary measuring 2–9 mm in diameter and/or an increased ovarian volume (> 10 ml).

Menstrual dysfunction was considered when the women had oligomenorrhea, defined by more than six cycles with a length of more than 35 days, and/or when the patient had not had any menstrual bleeding for three consecutive months during the last year. Clinical hyperandrogenism was defined as the presence of hirsutism (abnormal or excessive hair growth on the face, chest, abdomen and thighs), persistence of acne during the third decade of life or later, or the presence of androgenic alopecia. Hyperandrogenemia was defined by an elevated circulating testosterone and Dehydroepiandrosterone Sulphate (DHEAS) levels. Also, those who needed medications to allow withdrawal bleeding after 2–3 months of amenorrhea and after excluding pregnancy were also included". Women with primary infertility were included.

Women who were pregnant, menopausal and who had hysterectomy were excluded from the study. Women using hormonal contraceptives were excluded. Other endocrine causes of oligomenorrhea like hyperprolactinemia, hypothyroidism and late onset congenital hyperplasia were excluded. The study was approved by the Medical and Ethics Committee of the College of Medicine and Health Sciences, Sultan Qaboos University Cases were identified from the Hospital Information system and data were collected from electronic health records. The referrals came from all the primary and secondary care hospitals in the country.

All collected data were entered into SPSS (Version 16.0). Prevalence and frequencies were expressed as percentages and 95% confidence intervals (CI) were calculated using Graphpad program.

3. Results

3.1. Overall PCOS prevalence and anthropometric characteristics

A total of 255 subjects with PCOS were recruited among 3644 women who attended the gynecology clinic. The hospital-based frequency of PCOS among all the women referred to this clinic was 7%". The overall prevalence of PCOS per 1000

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