Prevalence of Polycystic Ovary Syndrome in a Moroccan Sample

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Abstract

Polycystic ovary syndrome (PCOS) is a heterogeneous multifactorial endocrine metabolic disorder and reproductive endocrine problem in women of childbearing age. This is a prospective study to estimate the prevalence of PCOS in Moroccan women on the basis of the Rotterdam criteria and to study the factors associated with PCOS. The study included 360 women aged 13 to 47 at the specialist consultation in the dermatology department of the 360 patients, 86 were diagnosed with PCOS. The age of the patients varied between 12 and 50 years. The main reasons for consultation: acne 78%, hyper trichos is 14%, alopecia 5%. During the physical examination, we noted that it was mainly inflammatory in 56% of cases. Hirsutism (Ferriman and Gallwey score). Obesity (BMI> to 30) increased in 64 patients with SOMPK (74%). Pelvic ultrasound confirmed the SOMPK. Hormonal evaluation was disrupted in 88% of cases. All of our patients on cyproterone combined with local acne treatment, a depilatory laser or minoxidil. Polycystic ovarian syndrome (PCOS) is a reproductive disorder that encompasses many conditions and has a direct impact on various metabolic processes. Despite the increased incidence of this syndrome, prevalence studies are limited. This article, to our knowledge, is the first description of the current status of PCOS among Moroccan women.

Keywords: Polycystic ovary syndrome; Androgenic

Abbreviations: PCOS: Polycystic Ovary Syndrome; BMI: Body Mass Index; OA: Operational Analysis; HA: Hyper Androgenism; FG: Ferriman Gallwey; GAGS: Global Acne Grading System; PCOM: Polycystic Ovarian Morphology; SOMPK: Syndrome des Ovaries Micro Polykystiques; NIH: National Institutes of Health; EE: Eosinophilic Esophagitis; CMA: Chlor Mad none Acetate; COCs: Combined Oral Contraceptives; NETA: Norethisterone Acetate; NOMAC: Nomegestrol Acetate; DRSP: Drosperinone

Introduction

Polycystic Ovary Syndrome (PCOS) is a heterogeneous multifactorial endocrine metabolic disorder and is the most common reproductive endocrine disorder among women of reproductive age [1]. Many criteria for the diagnosis of PCOS have been proposed in the literature. The Rotterdam criteria are the most widely used and supports a diagnosis of PCOS based on the presence of any two of the following characteristics:

i. Oligomenorrhea or amenorrhea (OA)
ii. Evidence of hyper and rogenism (HA)
iii. Polycystic ovaries on ultra sonography [2]

Some physiologic changes can mimic symptoms of PCOS, like oligomenorrhea, acne, and polycystic ovaries. Even if comedonal acne is the most common in adolescents, inflammatory acne that is un responsive to topical treatment is often a sign of HA. Finally, multifollicular ovaries on ultrasound are a normal variant finding and maybe mistaken for polycystic ovaries of PCOS [3]. It has been proven that women with PCOS have an increased risk for infertility, metabolic disorders, cardiovascular disease, and endometrial cancer. Hence, PCOS should be diagnosed as early as possible to prevent and treat associated conditions. The prevalence of PCOS varies widely among different countries and has been not been reported in Morocco. The present study aimed to estimate the prevalence of PCOS in Moroccan women based on Rotterdam criteria and to investigate factors associated with PCOS.

Materials and Methods

This study was approved by the Ethical Committee of the university hospital Hassan II. All participants included in the study signed informed consent. Data were collected from January 2014 to January 2017. The studied population consisted of 360 women's between the ages of 13 and 47 recruited from the specialized consultation of acne in the department of dermatology of the university hospital Hassan II. The Rotterdam criteria were used to diagnose PCOS and require that two of the following features be present: OA, HA, or polycystic ovaries. Oligomenorrhea was defined as absence of menstruation for 45 days and/or 8 cycles per year. Secondary amenorrhea was defined as the absence of menstruation for >90 days after menarche [2]. Clinical HA was defined by having any of the following features: a Ferriman-Gallwey (FG) score >6 [4], moderate-to-severe acne based on the Global Acne Grading System (GAGS), or androgenic alopecia. The GAGS scores the severity of acne as none (0 points), mild (1-18 points), moderate (19-30 points), severe (31-38 points), or very severe (>38 points). Biochemical HA was defined as testosterone>63ng/dL (2.8nmol/L) [5]. Ovaries were considered to have polycystic ovarian morphology (PCOM) with the presence of >12 cysts measuring 2–9mm in diameter and/or ovarian volume >10cm^3. Trans abdominal pelvic ultra sonography was performed by 4- to 8-mHz convex array probe. Asix-part questionnaire has been completed that included
a. General questions and questions about
b. Personal and family history

c. Menstrual history
d. Symptoms of HA
e. Physical examination
f. Findings of trans-abdominal ultrasound and blood measurement.

Results

Were corded 86 patients or 24% who had developed the SOMPK? The age of patients with SOMPK varied between 16 and 45 years while that of patients without SOMPK from 12 to 50 years. The proportion of patients with SOMPK was predominant in the 24-36 age group, 58 cases. After 40 years, the proportion of patients with SOMPK was less 8 cases or 9.3%. The risk of developing SOMPK is 1.5 times higher when the patient is nulliparous. The main complaints that led these patients to attend the consultation are acne 78%, hypertrichosis 14%, and alopecia 5%. At the physical examination, we noted that acne was predominantly inflammatory in 56% of cases. Hirsutism (Ferriman and Gallwey score> 8) was observed only in 10 patients with SOMPK. Obesity (BMI> to 30) was observed in 64 patients with SOMPK (74%). Pelvic ultrasound revealed, in all patients with SOMPK, the existence of micro cysts distributed at the periphery, on average 12.37 ± 1.43 (extreme: 10 and 17) for the right ovary and 12.66 ± 1.43 (extreme: 10 and 16) for the left ovary. Average ovarian dimensions of ovaries of patients with SOMPK. The hormonal assessment was disrupted in 88% of the cases. We put all our patients under cyproter one associated with a local treatment of acne, an epilatory laser or minoxidil. After 6 months of continuous intake of the pill, the ultrasound showed a decrease in the number of follicles in 14% of cases, and after 1 year in 26% of cases.

Discussion

In the present study, the prevalence of PCOS in Thai adolescents was 24% based on the Rotterdam criteria. To our knowledge, this is the first study to determine the prevalence of PCOS in adolescents in Morocco. Inflammatory acne and hirsutism were the factors most significantly associated with a diagnosis of adolescent PCOS. A meta-analysis using the Rotterdam criteria suggest that the world wide prevalence of PCOS in reproductive-aged women is approximately 10%, a value slightly higher than that obtained using the NIH criteria (9%) [6]. Most recent studies reporting the prevalence of PCOS in women evaluated women between 18 and 45 years and used either the Rotterdam or NIH criteria. These studies found the prevalence of PCOS to be 6.3% in Sri Lanka [7], 2.2% in southern China [8], and 5.6% in the Han Chinese population [9] using the Rotterdam criteria

and 6.7% in Greece [10] and 7.3% in Palestine [11] using the NIH criteria. Notably, the prevalence of PCOS in North India was evaluated using both the Rotterdam and NIH criteria and found to be 11.9% and 3.7%, respectively. Studies from America, and Iran diagnosed PCOS using NIH criteria [12-14], whereas studies from India used the Rotterdam criteria, similar to the present study [15,16,14]. Interestingly, one study used AE-POS criteria [17]. Some studies, defined hirsutism as a FG score! 6 [15,8,13], where as others, including the current study, defined hirsutism as a FG score! 8 [18]. Different ethnicities may have different incidences of PCOS. Acne and hirsutism is the most common clinical marker of PCOS. In a previous study of adolescents with PCOS, the prevalence of acne was found to range from 9.8% to 66% [19,20].

The presence of hirsutism may be influenced by other factors, such as ethnicity [21,22]. The role of ultrasound for the diagnosis of PCOS crucial. A recent study comparing trans-abdominal ultra sonography results between women with and without PCOS reported that ultrasound provided adequate visualization of the ovaries for the diagnosis of PCOS, even in obese girls [23,24], supporting the use of ultrasound in diagnosis PCOS in adolescents. Pharmacological treatment of PCOS is aimed at reducing the level of circulating androgens and controlling their effect at tissue level1 in order to ameliorate symptoms such as hirsutism and acne and reduce the risk of long-term metabolic consequences [25]. Combinations of EE and progestogens, especially those containing anti androgenic progestogens such as CPA, chlormadinone acetate (CMA), drospirenone (DRSP) and dingoes (DNG), have traditionally been the first choice for management of PCOS [26,27]. In cases where hirsutism is very severe or there are contraindications to hormonal treatment, other the rapiers such as finasteride may be required [28].

A combination of EE with a progestogen that possesses anti androgenic activity is regarded as the most appropriate choice for the treatment of PCOS [26]. However, the anti androgenic potential of COCs varies according to the type and dose of progestogens included. Older progestogens such as Norethisterone (acetate) (NET, NETA) and LNG, combined with EE, have been successfully used for treatment of acne, despite their primarily 'androgenic' action [29]. There is limited data regarding the use of newer progestogens, especially those that include DNG (strongly antiandrogenic), DRSP (antiandrogenic) and Nomegestrol acetate (NOMAC) (very weak antiandrogenic) in PCOS patients. Cyproter one acetate/ethinylestradiol is a reliable contraceptive for women who suffer from signs of androgenisation or

where acne or other similar conditions are adversely affected by other ovulation inhibitors and those on drugs with teratogenic risks [30]. Concomitant use of other hormonal contraception is not required and must be avoided.

Conclusion

Polycystic ovary syndrome (PCOS) is a wide spread reproductive disorder that encompasses many associated health conditions and has an impact on various metabolic processes. Despite the growing incidence of this syndrome, limited research has been done that encompasses the entirety of PCOS spectrum. This article, is to our knowledge, the first description of the current status PCOS in Moroccan women.

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