

Body Imaging and Sexual Behavior in Lean Women with Polycystic Ovary Syndrome

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ABSTRACT

Introduction. In women with polycystic ovary syndrome (PCOS), changes in body appearance may influence the feminine identity of the patients with possible consequent depression and sexual dysfunction.

Aim. The study aims to examine the differences in mood, perceived body image, sexual behavior, and clitoral vascularization between lean PCOS patients and healthy eumenorrheic controls.

Methods. Thirty-three lean PCOS women (Group I) and 22 healthy nonhirsute volunteers (Group II) were submitted, on day 3–5 of the cycle, to ultrasonographic (US) and Doppler analyses, to clinical, hormonal, and biochemical evaluations, and to psychometric tests.

Main Outcomes Measures. Main outcome measures are Ferriman–Gallwey score (FG), clitoral volume, clitoral artery Pulsatility Index, the two-factor Italian McCoy female questionnaire (MFSQ), the Stunkard Figure Rating Scale (FRS), and the Beck Depression Inventory (BDI) questionnaire.

Results. The FG score and the androgens resulted, as expected, more elevated in PCOS patients than in controls. However, the US assessment of the clitoral body volume and the resistances registered at the level of the dorsal clitoral artery did not show any difference between Group I and Group II patients. Moreover, the two-factor Italian MFSQ, the FRS, and the BDI were similar in both groups.

Conclusions. It seems that in lean PCOS women, the moderate hirsutism and hyperandrogenism do not have any important influence on body image and self-esteem and, as a consequence, on sexual function. **Morotti E, Persico N, Battaglia B, Fabbri R, Merigiola MC, Venturoli S, and Battaglia C. Body imaging and sexual behavior in lean women with polycystic ovary syndrome. J Sex Med 2013;10:2752–2760.**

Key Words. PCOS; Sexual Behavior; Genital Blood Flow; Body Image; Depression; Clitoris; Ultrasound

Introduction

Polycystic ovary syndrome (PCOS) is one of the most widely discussed and controversial endocrine disorder, characterized by chronic anovulation and hyperandrogenism [1], with a prevalence that varies between 1.4% and 22% in different studies [2–4]. Adams and coworkers [5] found polycystic ovaries in 26% of patients with amenorrhea, in 87% with oligomenorrhea, and in 92% of women with hirsutism. Therefore, polycystic ovaries are common in the female popula-

tion and there is a correlation between ovarian appearance, menstrual cycle history, and clinical evidence of androgen excess, such as hirsutism, cystic acne, seborrhea, hair loss, and obesity [6]. Obesity can profoundly affect the quality of life and induce depression (independently from other clinical symptoms) in otherwise healthy subjects [7]. Furthermore, overweight and obesity may be considered as risk factors for sexual dysfunction [8]. In PCOS women, the changes in body appearance (i.e., acne, hirsutism), the irregular or absent menstruations, and the difficulties in conceiving

may influence their feminine identity with consequent unhappiness, frustration, and depression [9]. In addition, the perceived “unattractiveness” may induce disturbances in sexual behavior and loss of self-esteem with profound effects on both intimate and social relationships. Trent et al. reported that girls with PCOS have a 2.8 times reduced likelihood to have sexual intercourse than healthy subjects [10]. On the other hand, the androgens seem deeply involved in the modulation of sexual function by positively acting on sexual desire, thoughts, and fantasies. However, the exact role of androgens in sexual arousal function remains controversial and not completely understood [11].

In humans, the sexual function involves a successful integration between an intact neural, vascular, and muscular circuitry, and complex interactions between multiple neurotransmitter systems and critical modulating influences from the endocrine system. One of the earliest changes in the female sexual excitation is an increase in vulvar, clitoral, and vaginal blood flow. Autonomic fibers from the hypogastric plexus and the nerve roots S2–S3 mediate the external genital blood flow. Nerves ending in the genital area produce an arterial vasodilator (vasoactive intestinal peptide) and a venous vasoconstrictor (neuropeptide Y) responsible of clitoral and vulvo-vaginal engorgement [12]. In addition, the neurogenic and endothelial release of nitric oxide (NO), produced by the action of NO synthase on L-arginine, induces a further increase of vasodilatation and tissue engorgement [13]. Several studies have shown that changes in clitoral blood flow can be objectively measured with the use of Doppler ultrasound (US) [14–18].

The aim of this study was to examine the differences in clitoral and labia minora dimensions and vascularization, mood, body image perception, and sexual behavior between PCOS patients and non-PCOS eumenorrheic controls. To avoid the possible relationship between overweight or obesity and sexual dysfunction, we studied only lean women.

Materials and Methods

Study Population

There were two groups of patients. Group I comprised Italian women with the following highly specific inclusion criteria: (i) PCOS, whose definition was based on the presence of hirsutism (Ferriman–Gallwey score >8), oligomenorrhea (menstrual cycle ≥ 35 days), increased plasma

circulating androgens, polycystic appearance of the ovaries on US (>10 subcapsular follicles of 2–10 mm, ovarian volume >8 mL, increased ovarian echogenicity) and color Doppler findings (decreased resistances at level of stromal ovarian arteries); (ii) normal body mass index (BMI; weight in kg/weight in m^2 ; BMI = 19–25); and (iii) stable heterosexual relationship for at least 1 year [19–21].

Group II included healthy nonhirsute volunteers with regular ovulatory cycles (25–35 days) and in a stable heterosexual relationship (≥ 1 year), matched for age (18–35 years) and BMI (19–25 kg/m^2).

All subjects had no intercourse the day prior the study; they were nonsmokers; did not take psychoactive drugs, recreational substances, or alcohol; did not make regular intense exercise; and had not received any hormonal therapy for at least 6 months prior to the study. In addition, women with neurological, psychiatric, cardiovascular, and endocrine disorders; secondary causes of hyperandrogenism; hypertension (systolic blood pressure >140 mm Hg and/or diastolic pressure >90 mm Hg); diabetes; renal or hepatic illness were excluded from the study. Further exclusion criteria were: uterine malformations, dyspareunia, endometriosis, ovarian functional cyst, unilateral ovarian resection or ovariectomy, urologic and proctologic diseases, history of perineal surgery or trauma. Pregnancy test was negative in all patients before the enrolment in the study.

All patients participated in the study after giving their informed consent. The study protocol was in accordance with the Helsinki II declaration and was approved by the Hospital Research Review Committee. The study was not advertised, and no remuneration or reimbursements were offered to the women. The study was conducted between January 2012 and December 2012.

Study Design

During the first screening evaluation, participants were assessed with a detailed history (i.e., menarchal age, presence of isolated pubarche, sexual behavior, relationship with the partner, etc.) and medical examination by a single examiner (E.M.). Standing height was measured using a Harpeden stadiometer (Holtain Ltd, Crymych, UK) to the nearest 0.1 cm and the weight was measured on a digital scale with a precision of 0.1 Kg (SECA 707; HH, Modena, Italy). The BMI was calculated in kg/m^2 . Hirsutism was assessed using the modified Ferriman–Gallwey score with a

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