



PCOS Knowledge and Practice Among a Sample of Physicians in Jordan

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Abstract

Purpose: The objectives of this study are to evaluate Jordanian physicians' understanding of Polycystic Ovarian Syndrome (PCOS), their opinion on diagnosis, practices and work-up procedures, and approaches to managing and treating PCOS.

Methods: This is a cross-sectional descriptive study that is questionnaire based. The sample was a convenient sample of Jordanian physicians who met the requirements for inclusion. The total number of responses to each question was used to represent the results.

Results: Percentages were used to express the results of the 95 surveys that were gathered. Most respondents employ the Rotterdam criteria. And chose hirsutism and acne or alopecia, as clinical signs of hyper-androgenism, they employ irregular cycles and/or oligo/amenorrhea to identify oligo/ anovulation. And carry out tests for impaired glucose tolerance test/diabetes mellitus (GTT/DM). They control PCOS by altering lifestyle choices and triggering ovulation with Clomiphene citrate or Metformin and controlling the cycle with combined contraceptive pills and treating hirsutism with anti-androgens.

Conclusion: Jordanian doctors demonstrated good awareness of PCOS practices around the world, but they believe that the diagnosis and term of PCOS should be changed. They also requested more seminars and training sessions on PCOS.

Keywords

Diagnosis, Gynecologist, Jordan, PCOS, Physician, Polycystic Ovarian Syndrom, Treatment.

1. Introduction

One of the most prevalent metabolic and endocrine illnesses in women of reproductive age is polycystic ovarian syndrome (PCOS). However, the syndrome has not yet been given a precise definition. Multiple PCOS diagnostic criteria make it challenging to get a diagnosis, and many women go misdiagnosed. The majority of clinicians frequently use the Rotterdam criteria and National Institutes of Health criteria for diagnosis (NIH). The NIH criteria, which was published in 1990, is based on the detection of excess androgens (clinically or biochemically), infrequent ovulations, and the elimination of other illnesses with comparable clinical signs (Szydlarska et al., 2017). While the Rotterdam criteria requires the presence of at least two of the following three disorders—oligomenorrhea/oligo-ovulation, clinical or biochemical hyperandrogenism (HA), and polycystic-appearing ovaries on ultrasound—and the exclusion of other similar conditions (Dokras et al., 2017). More people are covered by the Rotterdam definition, especially those who do not have clinical or biochemical HA. Actually, the European Society of Endocrinology's members employed hirsutism, biochemical hyperandrogenism (total testosterone or free androgen index) as their diagnostic criteria. Additionally, PCOS is known to be linked to varying degrees of insulin resistance and diabetes and is typically examined (Doll et al., 2012). Irregular menstrual cycles, hormonal imbalance, and a higher risk of metabolic problems were the main indicators cited by Australian women and primary care doctors (Teede et al., 2014). Additionally, hirsutism and biochemical hyperandrogenism are the most common criteria used by a panel of experts in Europe to diagnose PCOS, which is followed by menstrual irregularity (Conway et al., 2014).

The common focus of PCOS treatment procedures includes weight loss and lifestyle changes, metformin, oral contraceptives, clomiphene citrate alone or in combination with metformin, and ovulation induction (Doll et al., 2012; Conway et al., 2014).

The objectives of this study are to evaluate Jordanian physicians' understanding of PCOS, their opinion on diagnosis, their practices and work-up procedures, and their approaches to managing PCOS and treating PCOS patients.

2. Materials and method

2.1. The study type

The research is a cross-sectional descriptive study based on

an evaluation questionnaire.

2.2. Inclusion and exclusion criteria

Gynecologists, family medicine specialists, and general practitioners who practice in Jordan were among the inclusion criteria. Residents who are still under training and not practicing as general practitioners and medical students were among the exclusion criteria. The sample was a non-random, convenient sample of Jordanian doctors.

2.3. The questionnaire

The study tool (the questionnaire) included the title, objectives, and the type of the questionnaire. Prior to the questions, a message was delivered to the physicians asking them to kindly respond to the inquiries based on their own knowledge and their own clinical practice, regardless of the international recommendations.

Four sections made up the questionnaire; the first dealt with personal information. The participants were then questioned about their knowledge of diagnosis, in particular, the severity of PCOS and the diagnostic and treatment criteria. Testing for hyperandrogenism, metabolic problems, hyperprolactinemia, thyroid disorders, and congenital adrenal hyperplasia were among the conditions that were discussed in the practice section. The use of combined contraceptive pills, anti-androgens, metformin, myo-inositol (MI) and D-chiro-inositol (DCI), laparoscopic ovarian drilling, and counseling for long-term risk were among the topics covered in the third part of the questionnaire concerning treatment options. Future perspectives, which included updating the diagnosis and modifying the syndrome's name were discussed in the final section.

After being created by the author (SB), the questionnaire was forwarded to three academic experts, two practicing gynecologists, and one practicing family medicine consultant for review to ensure its validity and accuracy. The final version was released online, via google forms and was spread via social media and emails. Percentages and descriptive statistics were used to analyze the data.

2.4. Data analysis

The outcomes were expressed as percentages. The total replies to each question were used to compute percentages.

2.5. Ethical approval

The study was approved by the ethical committee at AL-Ahliyya Amman University, approval number: AAU/11/5/2020-2021.

2.5. Consent form

Although there was no consent form signed, the information that accompanied the link to the questionnaire made it apparent that doctors who wanted to engage voluntarily in the study should complete the questionnaire. The use of anonymous personal data was also disclosed to participants. Without having to give a reason, any participant was free to leave the research at any time.

3. Results:

3.1. Response rate

Totally 95 questionnaires were filled by Jordanian Physicians, because the study is a descriptive study, none of the questionnaires were excluded.

3.2. Study population

Most respondents (46.7%) worked in the private sector, and the majority of them (60.9%) were obstetricians and gynecologists. The remaining respondents were general practitioners or worked in family medicine.

3.3. Knowledge About PCOS and Diagnosis Perspective

Only 19.3% of participants encounter more than thirty PCOS patients per month, with the majority of individuals seeing less than fifteen. More than half of respondents (60%) agreed that PCOS can range from mild to severe, also (53.8%) disputed that stomach pain is a usual symptom. A number of 88 respondents answered the question about the criteria used to diagnose PCOS (Table 1).

More than half of the respondents believe that irregular cycles and/or oligo/amenorrhea are enough to suggest oligo/anovulation; of those, 51.6% agreed, 18.7% strongly agreed, and 52.2% disagreed that midluteal serum progesterone may be used to confirm this. Measurement of mid-luteal progesterone to establish oligo/anovulation was not agreed with by more than half of the respondents (52.2%), and 10% strongly disagreed. Nevertheless, 3.3% strongly agreed with utilizing that form of measurement, and 34.4% agreed. Half of the respondents (50%) thought that hyperandrogenism should be confirmed by

laboratory investigations.

A majority of respondents (58.9%) agreed that the presence of acne alone is sufficient to diagnose hyperandrogenism, while 45.1% believed that alopecia alone is sufficient, 92.1% identified hirsutism as their sign, and 88.4% believed that the presence of either acne or alopecia in addition to hirsutism is the preferred option.

Table 1. PCOS diagnostic criteria

Criteria	Respondents using these specific criteria to diagnose PCOS n (%)
	N= 88
Rotterdam Criteria	58 (65.9)
NIH criteria	17 (19.3)
Androgen Excess PCOS Society	2 (2.3)
Either Rotterdam or NIH Criteria	2 (2.3)
Either Rotterdam or NIH Criteria or androgen excess PCOS society	1 (1.1)
Other diagnostic criteria	8 (9.1)

3.4. Practice: Work-Up, Management and Counseling

Congenital adrenal hyperplasia, hyperprolactinomia, thyroid abnormalities, insulin resistance, impaired glucose tolerance test/diabetes mellitus (GTT/DM), and hyperlipidemia were the disorders that doctors were asked if they screen for when treating PCOS patients. Nearly half of the respondents (48.2%) screen for thyroid abnormalities, while the majority of respondents (60.2%) screen for impaired GTT/DM. Table 2 represents the methods that the respondents use to assess different health conditions, and table 3 illustrates methods used for testing insulin resistance.

Table 2. Screening of certain health conditions

Health condition	n	Response n (%)				
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Congenital adrenal hyperplasia	82	15 (18.3)	35 (42.7)	17 (20.7)	14 (17.1)	1 (1.2)
Hyper- prolactinemia	87	26 (29.9)	46 (52.9)	10 (11.5)	5 (5.7)	0 (0.0)
Thyroid abnormalities	87	27 (31.0)	47 (54.0)	11 (12.6)	2 (2.3)	0 (0.0)
Insulin resistance	91	26 (28.6)	54 (59.3)	8 (8.8)	1 (1.1)	2 (2.2)
Impaired GTT/ DM	88	18 (20.5)	53 (60.2)	16 (18.2)	0 (0.0)	1 (1.1)
Hyperlipidemia	86	11 (12.8)	37 (43.0)	34 (39.5)	3 (3.5)	1 (1.7)

Table 3. methods used for testing insulin resistance.

Method	Respondents n (%)
	N= 89
Glucose tolerance test (GTT)	20 (22.5)
Fasting insulin level	13 (14.6)
Fasting blood sugar	9 (10.1)
Homeostatic model assessment (HOMA) index	10 (11.2)
More than one test or other tests	37 (41.6)

All of the respondents (100%) thought that weight loss and lifestyle modification is the first step in managing PCOS patients. Most respondents agreed that clomiphene citrate (93.3%), metformin (84.1%), and gonadotropin (65.3%) should be used to induce ovulation. Laparoscopic ovarian drilling (45.6%) came in the next place followed by the combination of Myoinositol+D Chiroinositol (18.0%), and Myoinositol (14.5%). Because the percentages were determined as percentages of the total responses for each medicine, their sum does not equal 100%.

Concerning the Management of hirsutism, the doctors who responded stated that the best option for treating hirsutism is anti-androgens (88.8%), followed by cosmetic measures (78.4%), then combined contraceptive pills (77.5%), Metformin (56.3%), Myoinositol+ D Chiroinositol (24.6%), and Laparoscopic ovarian drilling (18.6%), and Myoinositol (16.1%). Because the percentages were determined as a percentage of all responses for each medicine, their total does not equal 100%.

Besides, 71.4% of the respondents, think that PCOS diagnostic criteria should be revised and 44.4% of them think

that the most suitable alternative name for PCOS is Metabolic reproductive Syndrome (48.3%). Around 81% of the respondents think that they will benefit from a workshop or training regarding PCOS.

4. Discussion

PCOS is defined as: “A combination of signs and symptoms of androgen excess and ovarian dysfunction in the absence of other specific diagnoses” (Escobar-Morreale 2018). This study evaluated the knowledge of a group of Jordanian physicians about PCOS and their attitude and practice to diagnose and treat and manage PCOS.

In the current work, the majority of responders concurred that gonadotropin, metformin, and clomiphene citrate should be used to induce ovulation, they also believed that combination contraceptive pills are the best cycle regulators, followed by Metformin, when it comes to cycle regulation. Metformin is the best treatment, according to 50% of respondents, for managing hirsutism. These findings actually concur with the published literature. Since ovulation inducing drugs like clomiphene

citrate or letrozole are more effective, the American Society for Reproductive Medicine advises against using metformin alone as the first-line of therapy for ovulation induction in women with PCOS (Penzias et al., 2017). Metformin is generally helpful in improving weight, body mass index, waist hip ratio, testosterone, and triglycerides in women with PCOS, including those classified by Rotterdam Criteria, according to the international evidence-based guideline for assessment and management of PCOS 2018. The use of metformin for an irregular menstrual cycle was, however, not supported by enough data (Teede et al., 2018).

Inositol is a polyalcohol that comes in nine different isomers, two of which are myo-inositol (MI) and D-chiro-inositol (DCI). Both of these are insulin mediators and have an effect that makes people more resistant to insulin, so they are used to treat PCOS (Colazingari et al., 2013). In PCOS patients, an imbalance between MI and DCI reduces insulin and follicle-stimulating hormone signaling (Cappelli et al., 2017). The current findings demonstrated that Myoinositol+ D-chiro-inositol (MI+ DCI) was preferred to Myoinositol in cycle regulation and hirsutism management.

In fact, for PCOS women who are unresponsive to treatment with clomiphene citrate, laparoscopic ovarian drilling (LOD) may be regarded as a safe, successful surgical option (Mitra et al., 2015). Ovarian drilling might cause reduction in circulation anti-mullerian hormone (Amer et al., 2017) and an increase in the potential for adhesion (Giampaolino et al., 2016). Actually, ovarian drilling is suggested as a second-line therapy for PCOS patients who are clomiphene citrate resistant, have an-ovulatory infertility, and no other infertility problems (Teede et al., 2018).

It is generally established that PCOS can have long-term risk effects on both metabolic and non-metabolic health conditions. According to the current findings, the majority of doctors first check for Congenital Adrenal Hyperplasia, then, in order, they check for insulin resistance, thyroid abnormalities, hyperprolactinoma, Impaired GTT/DM and finally hyperlipidemia. Which is in line with the health problems associated with PCOS that have been documented in the literature. The metabolic symptoms of disease are mostly influenced by obesity, insulin resistance, and hyperandrogenism. It was said that the patient's individual requirements and expectations must be considered, and that treatment must be dynamic and symptom-oriented (Escobar-

Morreale, 2018). According to Torchen (2017), PCOS is a metabolic condition associated with serious abnormalities in insulin function. As a result, PCOS individuals have a much higher rate of gestational diabetes, impaired GTT, and type 2 diabetes. Both the European Society and the American College of Obstetricians and Gynecologists advise PCOS patients to take a two hour, 75 gm oral glucose tolerance test as part of their screening for glucose tolerance (Dhesi et al., 2016). Women with PCOS are more likely to develop metabolic syndrome, and the most frequently reported symptoms include an increased waist circumference, elevated triglyceride levels, and low levels of high-density lipoproteins (HDL) (Torchen, 2017). In addition to having a higher risk of type 2 diabetes and insulin resistance, 60% of women with PCOS are obese. In fact, PCOS itself is a risk factor for type 2 diabetes, and, 70% of women with PCOS are known to have hyperlipidemia (Daniilidis and Dinas, 2009, Anagnostis et al., 2018).

The independent NIH Evidence-Based Methodology Workshop group acknowledged the necessity to rename PCOS (Teede, et al. 2018). Which agrees with the current findings, basically the finding that metabolic reproductive syndrome was preferred by more than two thirds of respondents. Besides, it was stated that educational meetings improve patient healthcare outcomes and professional practice (Forsetlund et al., 2009). This was evident from our results, particularly the finding that 81% of respondents believed that a workshop or training regarding PCOS was crucial.

Last but not least, there are a few issues with this study that need to be resolved in the future. The biggest drawback is the small sample size, which is mostly the result of the low response rate; future studies should take other methods of questionnaire collection into consideration, such as phone-calling people. Future research should take into consideration including a larger sample from additional specializations because PCOS can show in different specialties other than those covered in this study.

The recommendations include continuing to hold workshops and conferences on PCOS and conducting country-based studies on patients' perceptions as well as doctors', as well as the causes of the condition itself and the best ways to prevent and lessen its side effects.

5. Conclusion

Regarding PCOS and using standard guidelines and practices, Jordanian medical professionals showed very good knowledge of PCOS treatments used around the globe, however they think the nomenclature and diagnosis of PCOS should be altered. Additionally, they asked for more PCOS training seminars and classes.

Conflict of interests

The authors declare that there is no conflict of interest.

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