

Estimation and occurrence of polycystic ovary among Sudanese woman's 2018

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Abstract

Objective : Polycystic ovarian syndrome (PCOS) is one of the most common disease which affects women of reproductive age. The lack of well- defined diagnostic criteria makes identification of this common disease confusing to many clinicians. In addition to the needs of identification the differential diagnosis of the varied manifestations of the disorder .The importance of the study derived from the importance need of those caring patients to understand not only the management issues pertinent to their specialty, but also appreciate the other potential health risks in these women.

Methods: The incidence of infertility caused by PCOS has been increased in Sudan. So to assessment characteristics of the disease, this study was conducted among Sudanese patients affecting from (PCOS) diagnosed by radiologic Ultrasonography (US). Population of the study including sample of 50 women patients ages 14 years and older.

Results: The main results approved that Ultrasound is more reliable for the diagnosis of PCOS. The statistical analyzed of patients' age, weight and height showed that ,the mean age of the study sample was (28.46+ 7.13) years. The mean weight of the study sample was (71.22+12.91kg) and the mean height of sample was (160.6+6.6 cm). The results indicated that the majority of patient were with secondary infertility and most of them has irregular menstrual cycle percentage of (86%). Most of the study sample (96%) has pelvic pain, and all patient (100%) have signs of hirsutism. For hormonal results the majority were normal with (64%) percentage . Ultrasound findings showed (26) patients of abnormal ovarian size with percentage of (52%) .The majority of patients had follicles with (72%).

Conclusion: Ultrasound is more accurate in the diagnosis of PCOS, it can be used as the first line for the diagnosis of PCOS alone or combined with clinical assessment features such as menstrual disorder. Future studies recommended in correlation between uterine size and ovarian size in cases of PCOS. And correlation between obesity in relation to PCOS.

Key words: Polycystic ovarian syndrome, Ultrasonography, fertility ,follicles

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I. Introduction:

Polycystic ovary syndrome (PCOS) is a multi-factorial disease that affects from 4% to 12% women of reproductive age. Its pathogenesis etiology has not been elucidated in detail. It is the most common endocrine disorder in women of child-bearing age. A patient may present to any one of several providers: an internist, family practitioner, gynecologist, dermatologist, or endocrinologist, furthermore, the most distressing aspect of PCOS for any given patient may change over time, from hirsutism as a teenager to infertility as a young adult- potentially requiring several different providers along the way. It is important, therefore that those caring for these patients understand not only the management issues pertinent to their specialty, but also appreciate the other potential health risks in these women. Recent insights into the pathophysiology of PCOS have shown insulin resistance to play a substantial role and as such have brought the long- term issues of type 2 diabetes mellitus and its resultant increased risk of coronary artery disease to the forefront. No longer can irregular menses and/or hirsutism be thought of as benign nuisances. This study will focus on the most confusing aspects of PCOS for the practicing provider- diagnosis and differential diagnosis of varied manifestations of the disorder . The benefit and utmost importance of lifestyle modification for the long-term health of these women is stressed as well. It is hoped that some clarity in this regard will allow symptoms (hirsutism, irregular menses, etc.) more women to not only be diagnosed and managed properly for their presenting (1,2,3). This disease entity is

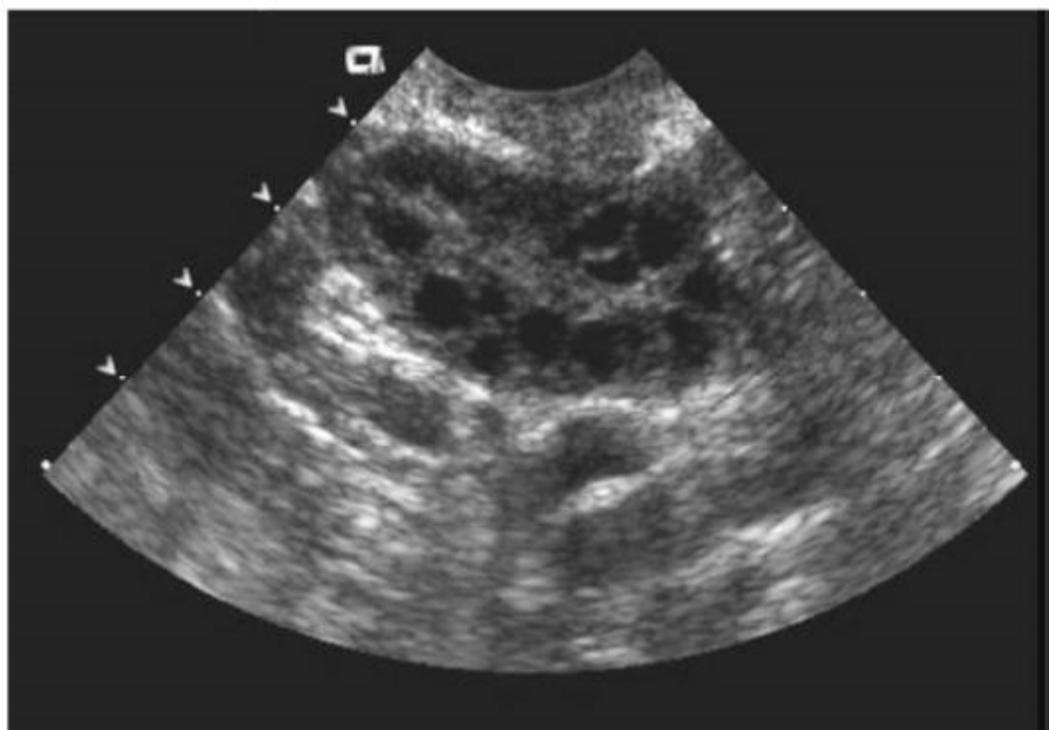
primarily characterized by disrupted ovulation and hyperandrogenism, but the clinical picture can be diversified and symptom intensity can vary. Currently, the sonographic assessment of ovaries is one of the obligatory criteria for the diagnosis of PCOS according to the Rotterdam consensus (2003) and Androgen Excess & PCOS Society (2006). This criterion is determined by the presence of ≥ 12 follicles within the ovary with a diameter of 2–9 mm and/or ovarian volume ≥ 10 cm³. Such an ultrasound image in one gonad only is sufficient to define polycystic ovaries. The coexistence of polycystic ovaries with polycystic ovary syndrome is confirmed in over 90% of cases irrespective of ethnic factors or race. (Fig1,2). However, because of the commonness of ultrasound features of polycystic ovaries in healthy women, the inclusion of this sign to the diagnostic criteria of polycystic ovary syndrome is still questioned(4). The development of new technologies has an undoubted influence on the percentage of diagnosed polycystic ovaries. This process has caused an increase in the percentage of polycystic ovary diagnoses since the Rotterdam criteria were published,(5,6,7). It is therefore needed to prepare new commonly accepted diagnostic norms concerning the number of ovarian follicles and the standardization of the technique in which they are counted(8). The assessment of anti-Müllerian hormone levels as an equivalent of ultrasound features of polycystic ovaries is a promising method. However, analytic methods have to be standardized in order to establish commonly accepted diagnostic norms.(9,10,11).

PCOS is diagnosed using a combination of physical exam, history, blood tests and ultrasound. On exam women who have PCOS usually complain of irregular or missed menstrual periods or a long time between periods. They may also be overweight, have increased hair growth (hirsutism), acne or be unable to get pregnant. On ultrasound, many women with PCOS have enlarged ovaries with many small cysts. Blood tests may show high blood sugar and high cholesterol levels or high levels of male hormones. ^(2,9) The ultrasonographic examination allows evaluating both external ovarian size, number of follicles, size of follicle and stromal echogenicity. Transabdominal 2D ultrasound has largely been superseded by transvaginal (TV) scanning because of greater resolution. The transabdominal route is of course required in girls and women who are Virgo intact or for patients who decline a transvaginal scan. ^(9, 10)

The incidence of infertility caused by PCOS has been increased in Sudan. This study was conducted to assess and review characteristics of polycystic ovary syndrome using ultrasound in Khartoum state.



Figure(1) Ultrasonographic appearance in the size and distribution of follicles within PCOS in 37 years old-women.



Figure(2) Transversepelvic sonogram showsPCOS ovaries in a 33 year-old female with oligomenorrhea and infertility.

II. Material and Methods:

This a descriptive analytic study conducted in Sudan - Khartoum statehospital.

The tools of the studyincluding a special sheet (closed questionnaire) were being designed to collect the data.

Samples analyzed in this study are consisted of 50 patients diagnosed by ultrasonography radiologic tools. The sample size were selected using control sample.

The patients' age is 14 years and older. The patients weight range was (44-101) kg and the height range between 150and 180 cm.

Statistical analyses for samples were performed using the SPSS software(Statistical Package for the Social Sciences)

III. Result

Table (3.1): Descriptive statistics of patients' age, weight and height:

	N	Minimum	Maximum	Mean
Age	50	14.0	43.0	28.5 ±7.13
Weight	50	44.00	101.00	71.2 ±12.91
Height	50	150.00	180.00	160.6 ±6.8

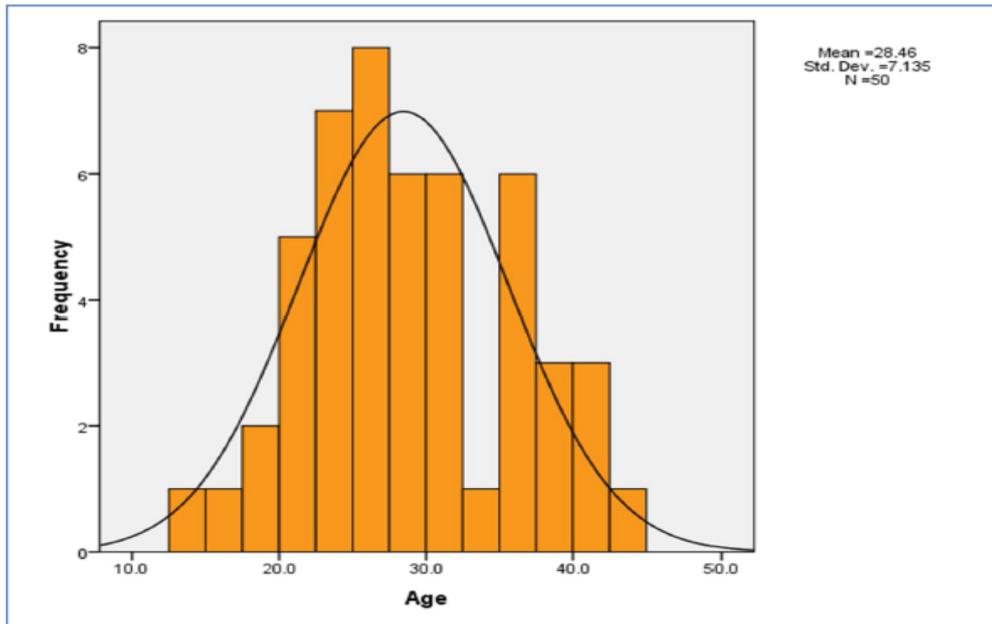


Fig.(3.1): Distribution of patients according to Age

From table (3.1) and fig.(3.1), it was found the patients ages fall between 14 and 43 years. The mean age of the study sample was (28.46 ± 7.13) years.

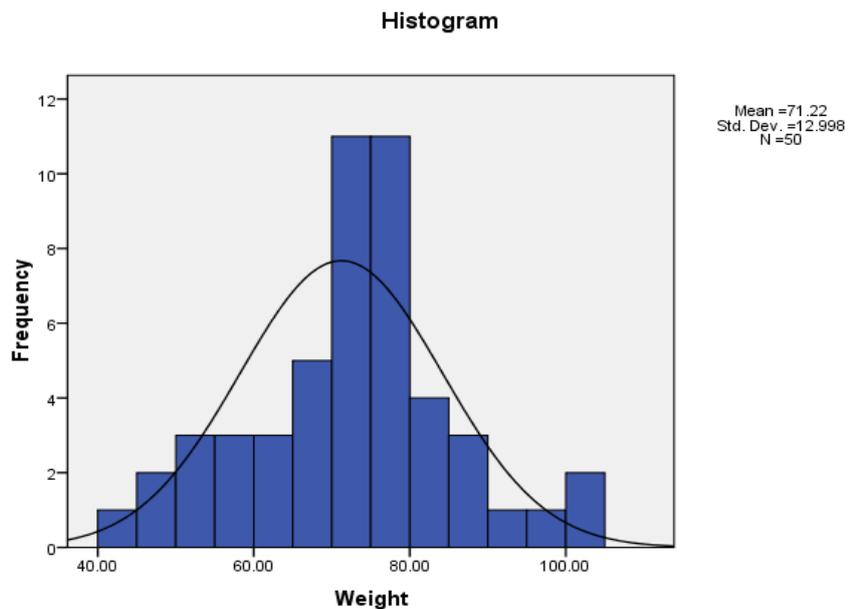


Fig.(3.2): Distribution of patients according to Weight

From table (3.1) and fig.(3.2), the patients weight range was (44-101) kg.. The mean weight of the study sample was (71.22 ± 12.91) kg).

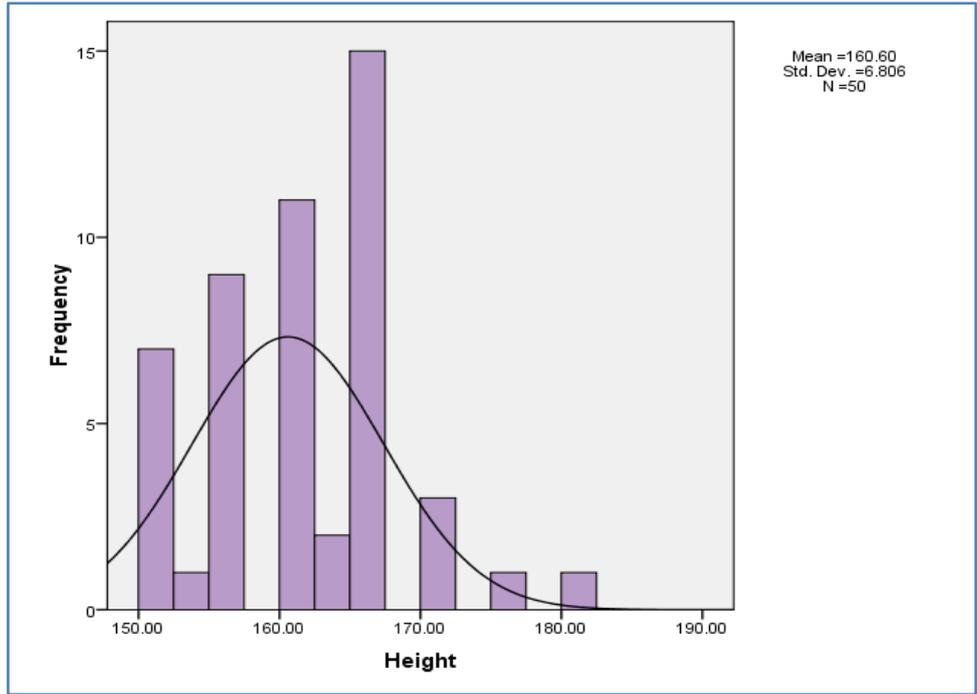


Fig.(3.3): Distribution of patients according to Height

Figure (3.3) shows that, the patients' height range between 150 and 180 cm. the mean height of sample was $(160.6 \pm 6.6 \text{ cm})$

3-4 Signs and Symptoms:

Table (3.2): Distribution of patients according to regularity of menstrual cycle :

Regularity	Frequency	Percent
regular	7	14.0
irregular	43	86.0
Total	50	100.0

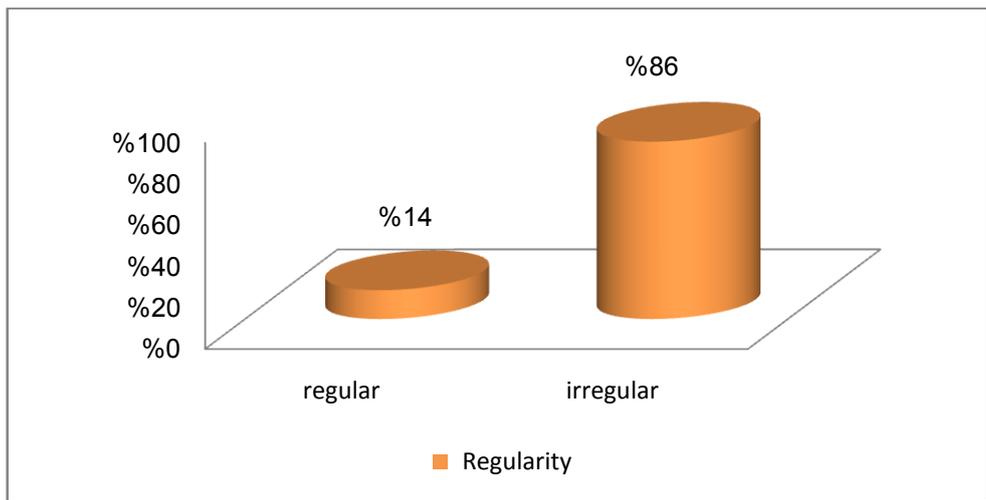


Fig. (3.4): Distribution of patients according to regularity of menstrual cycle

From table (4.3) and figure (4.3) most patients (86%) has irregular menstrual cycle. There is (14%) had regular menstrual cycle

Table (3.3): Distribution of patients according to pelvic pain:

Pelvic pain	Frequency	Percent
Yes	48	96.0
No	2	4.0
Total	50	100.0

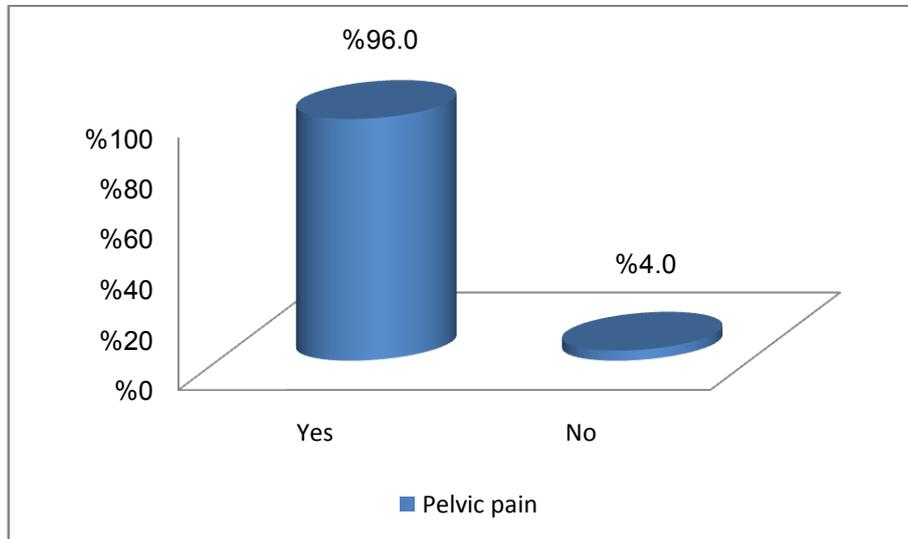


Fig (3.5): Distribution of patients according to pelvic pain

Most of the study sample (96%) has pelvic pain, only (4%) of them did not experience pelvic pain.

Table (3.4): Distribution of patients according to Hirsutism

Hirsutism	Frequency	Percent
Yes	50	100
No	-	-
Total	50	100.0

Table (3.4) showed that All patient (100%) have signs of hirsutism

Table (3.5): Distribution of patients according to Acne

Acne	Frequency	Percent
Yes	22	44.0
No	28	56.0
Total	50	100.0

From table (4.5) less than a half (44%) has acne.

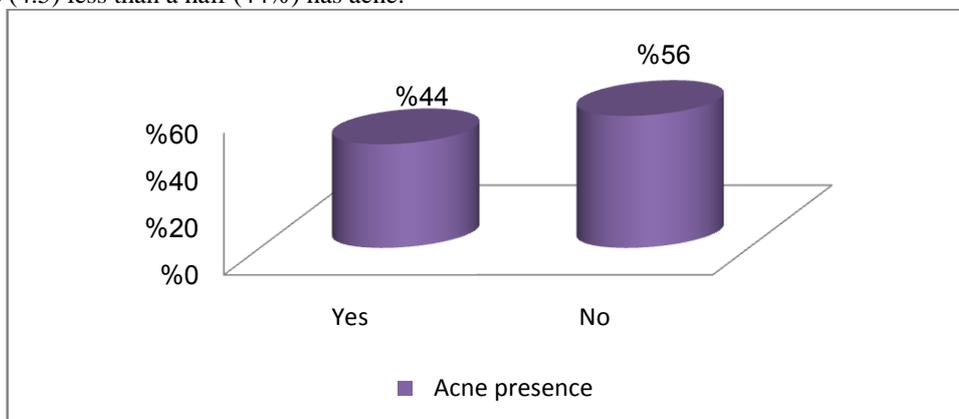


Fig (3.6): Distribution of patients according to Acne

From table (4.5) less than a half (44%) has acne.

Hormonal results:

Table (3.6): Hormonal Result :

Hormone	N	Readings		
		Min.	Max.	Mean
prolactin	50	117	1422	362 ±222.6
Follicle stimulated hormone	50	2.80	62.00	12.8 ±10.8
Luteinizing hormone	50	1.30	37.00	7.5 ±6.1
Thyroid stimulating hormone	50	0.80	42.00	3.6 ±5.9

Table (3.6) Shows the result of hormones tests. **PRI** mean was (362 ±222.6), **FSH** mean was (12.8 ±10.8), **LH** mean was (7.5 ±6.1) and **TSH** mean was (3.6 ±5.9)

Table (3.7): Distribution of patient according to method used

Method	Frequency	Percent
TA	15	30.0
TV	35	70.0
Total	50	100.0

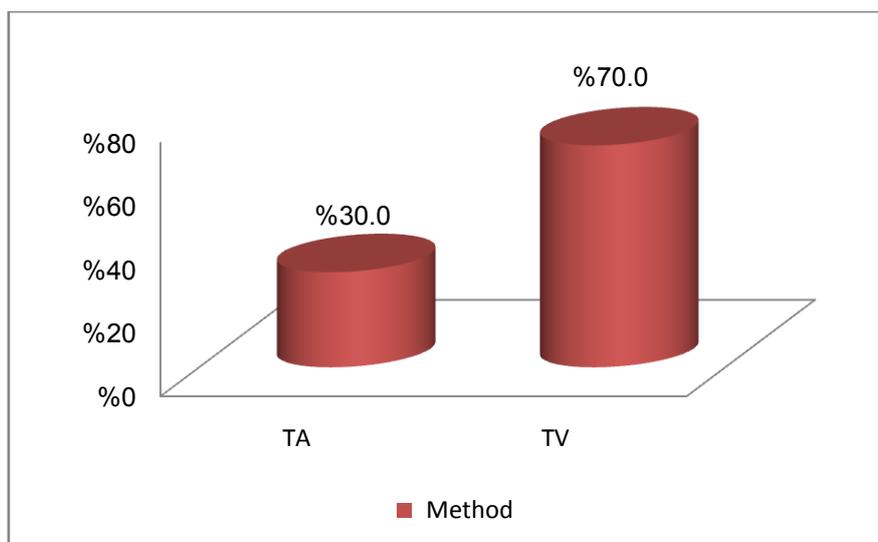


Fig. (3.7): Distribution of patient according to Ultrasound methods used TA was used with fifteen patients (30%), while TV was used with 35 patients (70%). That means TV was of more frequent use during ultrasound tests. Table (3.7) and figure (3.7) explain this result.

Table (3.8): Distribution of patient according to ovarian size

Ovarian size	Frequency	Percent
Normal	24	48.0
Abnormal	26	52.0
Total	50	100.0

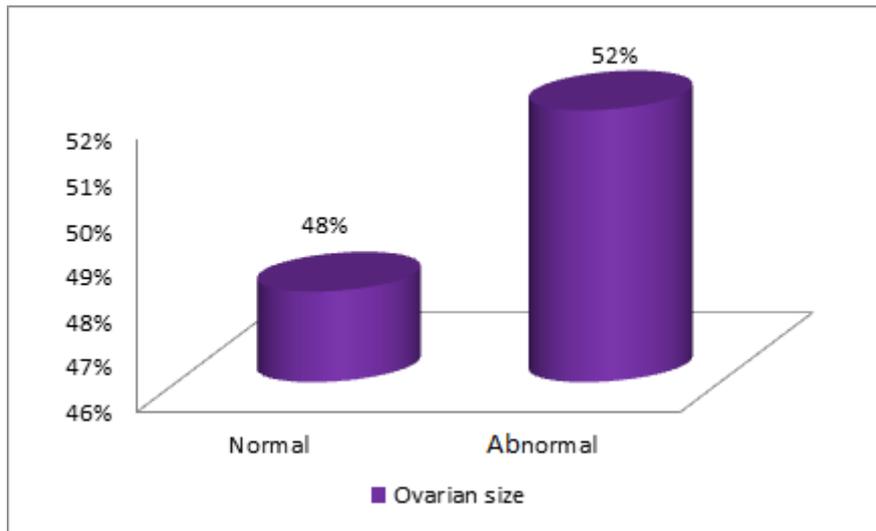


Fig. (3.8): Distribution of patient according to ovarian size

Ultrasound findings show (24) patient of normal ovarian size and (26) patients of abnormal size. That means (52%) of patients had up normal ovarian size.

Table (3-9): Distribution of patient according to presence of follicles

Follicles presence	Frequency	Percent
Yes	36	72.0
No	14	28.0
Total	50	100.0

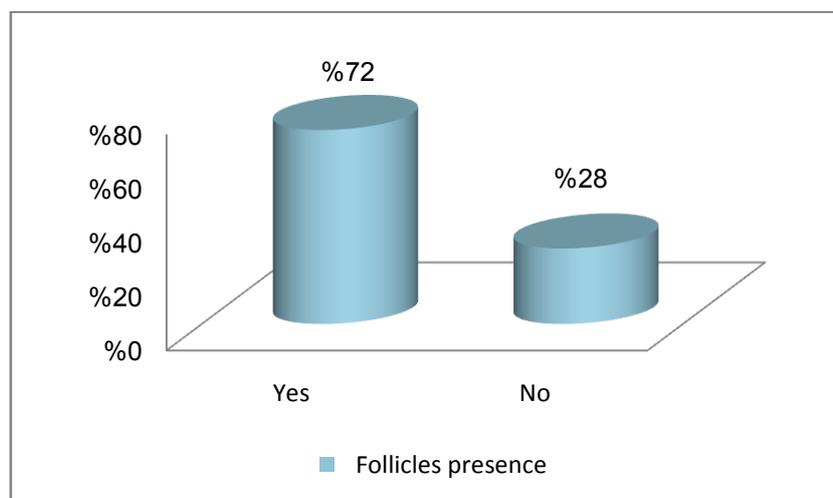


Fig. (3.9): Distribution of patient according to presence of follicles

The majority of patients (72%) had follicles, while the remaining (28%) had no follicles. See table (3.9) and figure (3.9).

IV. Discussion:

from table (3-1) and fig (3-1), (3-2) and (3-3) it was found the patients ages fall between 14 and 43 years. The mean age of the study sample was (28.46+ 7.13) years.

The patients weight range was (44- 101) kg . the mean weight of the study sample was (71.22+ 12.91kg).

The patients, height range between 150 and 180 cm. the mean height of sample was (160.6+6.6 cm).

From table (3.2) and figure (3.4) most patients (86%) has irregular menstrual cycle. There is (14%) had regular menstrual cycle

Most of the study sample (96%) has pelvic pain, only (4%) of them did not experience pelvic pain. This represented in table (3.3) and figure (3.5)

Table (3.4) shows that All patient (100%) have signs of hirsutism.

From table (3.5) less than a half (44%) has acne.

Table (3.6) shows the result of hormones tests. PRI mean was (362 ±222.6), FSH mean was (12.8 8 ±10.8), LH mean was (7.5 ±6.1) and TSH mean was (3.6 ±5.9)

TA was used with fifteen patients (30%), while TV was used with 35 patients (70%). That means TV was of more frequent use during ultrasound tests. Table (3.7) and figure (3.7) explain this result.

Table(3.8) displays that Ultrasound findings show (24) patient of normal ovarian size and (26) patients of abnormal size. That means (52%) of patients had abnormal ovarian size.

The majority of patients (72%) had follicles, while the remaining (28%) had no follicles. See table (4.9) and figure (4.11).

V. Conclusion:

Ultrasound can be used alone or with combination for the diagnosis of PCOS .When combined with clinical features such as menstrual disorder and/or symptoms of hyperandrogenaemia,Ultrasound is more reliable for the diagnosis of PCOS than Presence of ultrasonic appearance of PCO in absence of signs and symptoms.Also it found that in most cases reported with PCOS ,there are overweight and obesity. The present results proved that the Ultrasonographic examination usefulness in diagnosingPCOS by assessment of the ovaries size, size of follicles,number of follicles andstromal echogenicity. Recent study recommended to use ultrasound as the first line for the diagnosis of PCOS to save money and time and useBiochemical analysis for symptomatic patients who have no evidence of PCO on ultrasound.Future studies needs in correlation between uterine size and ovarian size in cases of PCOS. And also Future studies recommendedin correlation between obesity in relation to PCOS.

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