



A New Method for Energy Saving on Wireless Sensor Network Based on Clustering Method

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Abstract

Recently, the disease of polycystic ovaries has increased in women, especially in adolescence, which in turn negatively affects the change of some hormones and staying up for a long time, which in turn affects the hormone melatonin, which plays a major role in fertility. Blood samples were collected from women suffering from polycystic ovaries, after this was proven by ultrasound, and they were unmarried. In contrast, blood was collected from twenty girls without ovarian cysts as a control for comparison, and the following tests were performed FSH,LH ,prolactin and Testosterone , Urine was collected from the same women who suffer from ovarian cysts and women who do not suffer from this disease for the purpose of investigating the microbial content and the normal flora of the microorganisms. Result effect of ovarian cysts on some sex hormones in women with this disease and their comparison with healthy women, where there was a significant deficiency in the hormone LH and FSH where its concentration reached 1.5 and 1.8 respectively in the affected women compared to the healthy ones whose concentration reached 7 and 7, respectively, which are the normal levels of this hormone. On the contrary, there was an increase in the hormone prolactin and testosterone in the affected women, where the concentrations of 42 and 72 respectively in the affected women compared to the control 8, 10, respectively.

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1. Introduction

Cysts in the ovary are fluid-filled sacs or pockets inside or on the ovary's surface. Women have two ovaries, one on each side of the uterus, each the size and shape of an almond (Seguin et al., 2021). During the reproductive years, eggs (ovum) develop and mature in the ovary and are discharged during menstrual cycles (Lim et al., 2021). Many women have had polycystic ovaries at some point in their lives (Xu et al., 2021). The majority of ovarian cysts are painless and harmless. The

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majority of cases resolve on their own within a few months without therapy (Melcer et al., 2021). However, ovarian cysts, particularly ruptured cysts, might present with significant symptoms (Movva and Kavya, 2021). To safeguard your health, you should have routine pelvic examinations and be aware of any signs that may suggest a potentially dangerous condition (Eisenberg, 2021). Each month, the ovaries create cyst-like structures called follicles, During ovulation, follicles generate estrogen and progesterone and release an egg (Gumusoglu et al., 2021). A functional cyst develops when the normal monthly follicle continues to expand (Karunakaran, 2021). There are two types of functional cysts, follicular cysts and sebaceous cysts. The egg is released from the follicle and goes to the fallopian tube by the middle of the menstrual cycle (Abbas and Kazaal, 2021). A follicular cyst develops when an egg-bearing follicle does not burst or release its egg but continues to grow (Balachandren et al., 2021). Cyst luteal When an egg is released from a follicle, the follicle begins generating estrogen and progesterone in preparation for pregnancy (Kadhim et al., 2021). The corpus luteum is the new name for this follicle (Ibrahim, 2021). Occasionally, fluid accumulates within the follicle, causing the body to expand (Hussein, 2021). Epidermoid cysts and cystic adenomas can become large enough to engulf the ovary. This raises the risk of ovarian torsion, a painful twisting of the ovary, Torsion of the ovary may result in a reduction or cessation of blood supply to the ovary (Hussein, 2020). Certain women have uncommon forms of cysts that are discovered during a pelvic exam. Polycystic ovaries are a condition that develops during menopause and may be cancerous (malignant) (Musa et al, 2020). As a result, it is critical to undergo frequent pelvic checks.

2. Methodology

2.1. Sample Collection

Blood samples were collected from women suffering from polycystic ovaries, after this was proven by ultrasound, and they were unmarried. In contrast, blood was collected from twenty girls without ovarian cysts as a control for comparison, and the following tests were performed FSH, LH, prolactin and Testosterone .

2.2. Urine collection

Urine was collected from the same women who suffer from ovarian cysts and women who do not suffer from this disease for the purpose of investigating the microbial content and the normal flora of the microorganisms.

2.3. Isolation and identification of bacteria

After collecting urine samples, the microorganisms were isolated on the selective media, which included MaConkey agar ,Blood Agar and MRSThen she was diagnosed with Vitek 2

3. Result

Table 1. Effect of Ovarian cysts and their effect on some sexual hormones

Descriptive Statistics			
Dependent Variable: ng/ml			
case of patient	physiological parameters	Mean	Std. Deviation
Women with ovarian cysts	LH	1.540	.3209
	FSH	1.800	.7314
	prolactin	42.200	9.0388
	testosterone	72.600	9.8387
	Total	29.535	31.2513
control	LH	7.800	.8367
	FSH	7.400	.8944
	prolactin	8.200	.8367
	testosterone	10.000	1.8708
	Total	8.350	1.4965

Tumors of the endometrium Endometriosis is a cyst that develops as a result of endometriosis, a disorder in which the uterine lining tissue (endometrium) grows outside of the uterus. Thus, in some women, this form of ovarian cyst may impair fertility. Polycystic ovary syndrome is the cause of ovarian cysts. Polycystic ovarian syndrome is a disorder in which women develop several tiny cysts on their ovaries, as well as irregular periods and elevated levels of certain hormones. PCOS is characterized by irregular ovulation, which can impair fertility in certain women. Table 1 shows the effect of ovarian cysts on some sex hormones in women with this disease and their comparison with healthy women, where there was a significant deficiency in the hormone LH and FSH where its concentration reached 1.5 and 1.8 respectively in the affected women compared to the healthy ones whose concentration reached 7 and 7, respectively, which are the normal levels of this hormone. On the contrary, there was an increase in the hormone prolactin and testosterone in the affected women, where the concentrations of 42 and 72 respectively in the affected women compared to the control 8, 10, respectively.

Table 2. ANOVA table of effect of Ovarian cysts and their effect on some sexual hormones

Dependent Variable: ng/ml					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	22347.526 ^a	7	3192.504	138.175	.000
Intercept	14352.732	1	14352.732	621.203	.000
case	4488.042	1	4488.042	194.248	.000
parameters	9484.257	3	3161.419	136.830	.000
case * parameters	8375.227	3	2791.742	120.830	.000
Error	739.352	32	23.105		
Total	37439.610	40			
Corrected Total	23086.878	39			

Table 2 Analysis of variance for the effect of ovarian cysts on some sex hormones, where it was noted that there are significant differences between women with ovarian cysts and healthy women, and there are significant differences between physiological variables, and there are significant differences between the interaction of variables with the type of case for women under study, as shown in Figure 1. For cystic adenomas. Cystic adenomas are ovarian tumors that appear as

abnormal growths on the surfaces of the ovaries. These tumors may require treatment, but they affect fertility in women who have them.

Table 3. The least significant difference for the effect of ovarian cysts on some sex hormones

LSD				
(I) physiological parameters	(J) physiological parameters	Mean Difference (I-J)	Std. Error	Sig.
LH	FSH	.070	2.1496	.974
	prolactin	-20.530*	2.1496	.000
	testosterone	-36.630*	2.1496	.000
FSH	LH	-.070-	2.1496	.974
	prolactin	-20.600*	2.1496	.000
	testosterone	-36.700*	2.1496	.000
prolactin	LH	20.530*	2.1496	.000
	FSH	20.600*	2.1496	.000
	testosterone	-16.100*	2.1496	.000
testosterone	LH	36.630*	2.1496	.000
	FSH	36.700*	2.1496	.000
	prolactin	16.100*	2.1496	.000

We note that there are significant differences for the hormone LH with the hormone prolactin and testosterone, and there is no significant difference with the hormone FSH, and there is a significant difference between FSH with prolactin and testosterone, and there is no significant difference with the hormone and prolactin, there is a significant difference with all sex hormones, as well as for the testosterone hormone this comparison It was among the infected women with healthy subjects

Figure 1. Effect of Ovarian cysts on some sexual hormones

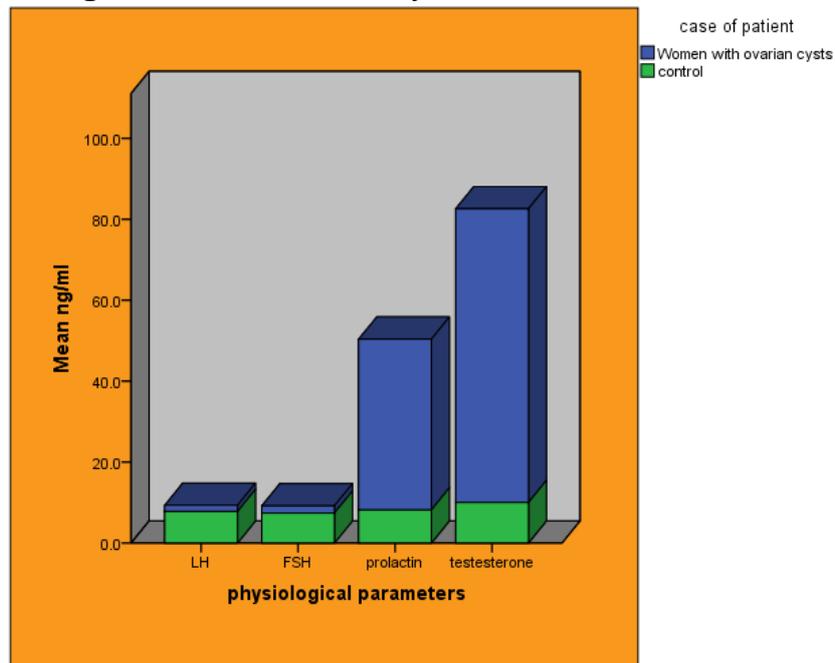


Table 4. Ovarian cysts and their effect on normal flora of microorganism in unmarried women

Dependent Variable: total count of bacteria			
case of patient	type of bacteria	Mean	Std. Deviation
Women with ovarian cysts	proteus	8000.00	1000.000
	pseudomonas	7000.00	1224.745
	klebsiella	6200.00	1643.168
	lactobacillus	1600.00	547.723
	Total	5700.00	2735.729
control	proteus	2000.00	707.107
	pseudomonas	1800.00	836.660
	klebsiella	2000.00	707.107
	lactobacillus	9000.00	707.107
	Total	3700.00	3213.459

Table 4 shows the total number of microorganisms isolated from the urine of women with ovarian cysts and comparing them with healthy women. The table shows the total number of pathological microorganisms and natural fluorescence, where it was clear that there is an increase in the number of pathological microorganisms and a decrease in the number of normal flora, where the numbers of *Protous* and *Pseudomonas aeruginosa* bacteria reached and *Klebsiella* 8000, 7000 and 6200, respectively, while the number of natural fluorescence reached 1,600 in infected women compared to healthy women, where the number was 1,800, 2,000, 2,000, respectively, compared to the normal fluorescence of 5,700 cells / ml

Table 5. Ovarian cysts and their effect on normal flora of microorganism in unmarried women

Dependent Variable: total count of bacteria					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	347600000.000 ^a	7	49657142.860	51.592	.000
Intercept	883600000.000	1	883600000.000	918.026	.000
case	40000000.000	1	40000000.000	41.558	.000
bacteria	9000000.000	3	3000000.000	3.117	.040
case * bacteria	298600000.000	3	99533333.330	103.411	.000
Error	30800000.000	32	962500.000		
Total	1262000000.000	40			
Corrected Total	378400000.000	39			

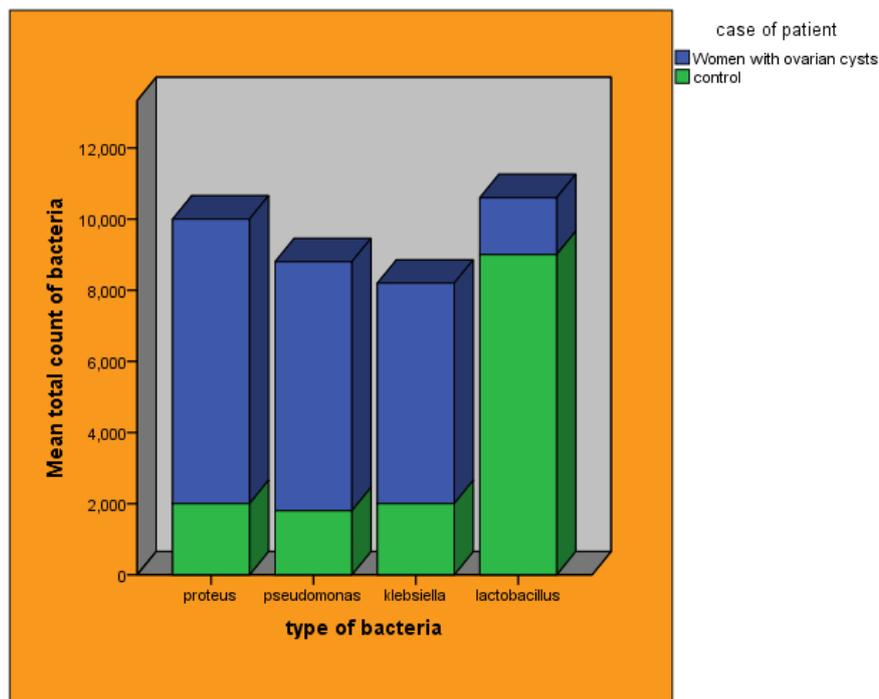
Table 5 Analysis of variance for the effect of ovarian cysts on the preparation of pathological microorganisms and natural fluorescence and their comparison with healthy women, where it was noted that there are significant differences between women with polycystic ovary disease and healthy women, as well as significant differences between the types of microorganisms, as well as significant differences between the interaction of the pathological condition and the type of bacteria As shown in Figure 2.

Table 6. The least significant difference for the effect of ovarian cysts on total count bacteria

		LSD		
(I) type of bacteria	(J) type of bacteria	Mean Difference (I-J)	Std. Error	Sig.
proteus	pseudomonas	600.00	438.748	.181
	klebsiella	900.00*	438.748	.048
	lactobacillus	-300.00-	438.748	.499
pseudomonas	proteus	-600.00-	438.748	.181
	klebsiella	300.00	438.748	.499
	lactobacillus	-900.00-*	438.748	.048
klebsiella	proteus	-900.00-*	438.748	.048
	pseudomonas	-300.00-	438.748	.499
	lactobacillus	-1200.00-*	438.748	.010
lactobacillus	proteus	300.00	438.748	.499
	pseudomonas	900.00*	438.748	.048
	klebsiella	1200.00*	438.748	.010

Table 6 shows the least significant difference for the effect of polycystic ovary disease on the number of microorganisms and natural flora. There were significant differences between *Protous* and *Klebsiella* bacteria, and there were no significant differences with *Pseudomonas aeruginosa* and normal flora, and there were significant differences between *Pseudomonas aeruginosa* and normal flora, and there were no significant differences Significant with *Protous* and *Klebsiella*, and there are significant differences for *Klebsiella* bacteria with Proteobacteria and normal flora, and there is no significant difference with *Pseudomonas aeruginosa*

Figure 2. Ovarian cysts and their effect on normal flora of microorganism in unmarried women



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