The effect of a program using aerobic exercise on some biochemical variables on Polycystic ovary syndrome cases

Pro. Naser Moustafa Mohamed
Professor of Sports Health, Sports Health Sciences dep., Faculty of Physical Education, Minia University.
Pro. Mahmoud Hosny Ibrahim
Professor at Obstetrics, Gynecology and Infertility dep., Faculty of Medicine, Minia University
Dr. Mohamed Mohamed Ali
Assistant Professor at Sports Health Sciences dep., Faculty of Physical Education, Minia University.
Dr. Faten Zedan Abaas
Assistant Lecturer at Sports Health Sciences dep., Faculty of Physical Education, Minia University

Introduction & research problem:

Polycystic ovary syndrome Polycystic ovary syndrome is a problem that affects women, which occurs as a result of a hormonal problem that affects women during their childbearing years.(14:231)

There is no doubt that regular exercise gives us a physical and a mental benefits, which emphasize the positive impact of regular exercise on the basic body hormones. This led to the vitality of the body, thus enjoy better health, and the loss of excess and unwanted weight. It is known that hormones are only Chemicals in the body(5:120).

Polycystic ovary syndrome is the most common hormonal disorder in women of childbearing age, affecting 5% - 15% of women as early as the second decade of life [1-3]. , PCOS is manifested by hyperandrogenism, for example increasing the physical activities is the first approach in controlling PCOS.(7:89) .

Pituitary-derived Luteinizing Hormone (LH) is also common in women with Polycystic ovary syndrome and stimulates ovarian secretion of androgens. The ovaries produce Mullerian hormone (AMH), which is an indication of the presence of ovarian reserve, which decreases as a function

of age. The levels of AMH in the serum are higher in women with PCOS(10:62).

The research problem appears in that the imbalance of hormones and poor efficiency of the ovaries lead to the presence of polycystic ovaries, which leads to a delay in pregnancy, even if at childbearing age. So the aerobic exercises are used to balance hormones and also to increase the efficiency of the ovaries for pregnancy.

Research Importance:

An attempt to explain and support that a program using aerobic exercise helps to balance the hormones in women with Polycystic ovary syndrome, thus activating the ovaries and causing pregnancy.

1-Professor of Sports Health, Sports Health Sciences dep., Faculty of Physical Education, Minia University.

2-Professor at Obstetrics, Gynecology and Infertility dep., Faculty of Medicine, Minia University.

3-Assistant Professor at Sports Health Sciences dep., Faculty of Physical Education, Minia University.

4-Assistant Lecturer at Sports Health Sciences dep., Faculty of Physical Education, Minia University.

Research objective:

Design a training program to know its effect on Some biochemical variables in women with Polycystic ovary syndrome.

Research hypotheses:

-There are statistically significant differences between the two post measurements of the experimental and control group on(FSH)

-There are statistically significant differences between the two post measurements of the experimental and control group on(LH)

-There are statistically significant differences between the two post measurements of the experimental and control group on the hormone (PRL)

Some of the terms used in the research:

Aerobic exercises

The word aerobic means muscle work that depends mainly on oxygen in the production of energy, which means to product it by the muscle in an aerobic manner(1:209).

Polycystic ovary syndrome

It is a disorder in the hormonal balance of the ovaries that often affects women of reproductive age, resulting in irregular menstruation, oligomenorrhea, amenorrhea, a disorder in the ovulation process, or infertility (123).

Previous studies

1-Each of "Patel, V. Menezes, H. Menezes" Patel, V.; Menezes, H.; Menezes" (2020) (12) conducted a study entitled "Practicing regular vigilance yoga as a way to improve androgen levels in women with PCOS", where the research sample included 31 women with Polycystic ovary syndrome between the ages of 23 and 42 years, the most important results indicate that Practicing regular mindfulness yoga can be a useful complementary treatment option for women with Polycystic ovary syndrome, especially for improving blood androgen levels.

2-Grei Shele, Jessica Genkil and Diana Speelman (2020) (6) conducted a study entitled "A systematic review of the effects of exercise on hormones in women with Polycystic ovary syndrome", where the sample was included on 345 women with PCOS, and the most important results indicated that vigorous aerobic exercise improves androgen levels in women with Polycystic ovary syndrome.

3-Each of "Ribeiro, V.B.; Kogure, G.S.; Lopes, I. (2020) (13) conducted a study entitled "The effects of continuous and intermittent aerobic physical training on hormonal characteristics" Metabolism, and body composition in women with Polycystic ovary syndrome." The research sample included 97 women with PCOS who were chosen randomly. The most important results indicate that training led to a reduction in anthropometric indicators and hyperandrogenism and PCOS.

4-Ehab Fathi Abdel Aziz's study (2018) (8) entitled "The effect of aerobic exercise on the hormone progesterone and prolactin for obese women with Polycystic ovary syndrome 20-25 years". The study sample included 12 obese women from the fitness center. The researcher used the experimental drug. The most important Results showed the weight improvement by 9.8%. Decreased thickness of skin folds using regular exercise and aerobic exercise led to a positive improvement in some fertility hormones such as prolactin and progesterone.

Research procedures

Research Methodology:

The experimental method was used by applying the pre- and post-measurement on two experimental groups

The research sample:

The research sample was chosen in a deliberate way from women with Polycystic ovary syndrome, Minia University, and the total population of the selected sample was (28) women, including (8) women for the exploratory study and (20) women for the basic study.

Table(1)

The homogeneity of the sample members in the variables under study

(n = 28)

variables	Measurement unit	mean	Median	standard deviation	skew coefficient
Age	Year	33.75	34.00	1.33	-0.824
Hight	cm	159.50	159.50	2.25	0.00
FSH	MLU/ML	5.46	5.50	2.33	0.216
LH	MLU/ML	8.84	8.80	3.70	0.247
PRL	Ng/ML	19.80	19.30	8.63	0.182
AMH	Ng/ML	3.53	3.47	2.63	0.512

It is clear from Table (1) that the values of the skew coefficients were limited to (-0.824, 0.512) and they lie between (±3). This indicates the moderation of the distribution in the variables under study,

Measurements used in the search

-Measurement of height in rheostat

-Weighing with Tinita device

- Hormonal measurement with AIA36

Table (2)

The significance of the differences between the two post measurements of the experimental and control group in the variables under study (n1 = n2 = 10)

Variables	Measurement unit	Statistical coefficients									
		experimental		control		Experimental		Control		(Z) value	Significance level
		S-	A±	S-	A±	Rank average	Total ranks	Rank average	Total ranks		
FSH	ML/MLU	6.29	2.29	5.24	2.43	9.20	92.00	11.80	118.00	-0.983	0.032
LH	ML/MLU	5.24	4.61	9.39	1.03	6.50	65.00	14.50	145.00	-3.029	0.002
PRL	ML/Ng	17.60	7.09	22.25	9.47	8.80	88.00	12.20	122.00	-1.287	0.019

It is evident from Table (2) that

There are statistically significant differences between the two post measurements in the experimental and control samples, as the error probability value is less than the significance level of 0.05, in all research variables and in favor of the experimental group

Discuss the results

It is clear from Table (2) that there are statistically significant differences between the two post measurements of the experimental group and the control group in FSH in favor of the experimental group, where the mean of the post measurement for the experimental group was (6.29) and the average of the post measurement for the control group was (5.24) at the significance level. (0.032)

The researcher attributes the increase and improvement in FSH to the use of physical exercise, which led to a high percentage of FSH, and this leads to an increase in ovulation and an increase in pregnancy.

This is in agreement with what was mentioned by Nawras Nouri Beshbush (2016) (4) that it is the ovarian follicle-stimulating hormone or follicle-stimulating hormone, which is a hormone secreted by the pituitary gland in the head, and controls the growth of eggs and ovarian activity and the level of FSH is useful for verification For menstrual disorders. The normal range for this hormone is 3-20 M/ MLU.

It is clear from Table (2) that there are statistically significant differences between the two post measurements of the experimental group and the control group in LH hormone) in favor of the experimental group, where the average of the post measurement for the experimental group was (5.24) and the average of the post measurement for the control group was (9.39) at the significance level (0.002).

The researcher attributes the increase and improvement in the hormone LH) to the use of physical exercises that led to a decrease in the proportion of the hormone LH) and this leads to an increase in ovulation and an increase in the efficiency and activity of the ovaries.

Hussam Zaki (2012) (2) indicates that the proportion of this hormone may increase in cases of ovarian cysts, and decrease with exercise, which helps the ovulation process.

This study agrees with the study of “Geri Shele, Jessica Genkil, Diana Speelman” Grei Shele, Jessica Genkil and Diana Speelman (2020) (6) that vigorous aerobic exercise improves androgen levels in women with PCOS.

It is clear from Table (2) that there are statistically significant differences between the two post measurements of the experimental group and the control group in the hormone (PRL) in favor of the experimental group.

The researcher attributes the increase and improvement in the PRL hormone to the use of physical exercises that led to a decrease in the

proportion of the PRL hormone, and this leads to an increase in ovulation and an increase in the possibility of pregnancy.

This is consistent with J. Funct. Morphol (2020) (9) that the rise of hyperprolactinemea in women causes hormonal disorders, which leads to disturbances in the menstrual cycle in women who suffer from a rise in the milk hormone, the absence of ovulation and the growth of ovarian follicles.

Conclusions

- Aerobic exercise helps in weight loss well.

-Aerobic exercise helps regulate hormone levels

-Physical exercise helped to increase the efficiency of the activity of the ovaries

Recommendations

-Aerobic exercise for women with Polycystic ovary syndrome.

-Continuing to do aerobic exercise to regulate hormone levels.

-Not to interrupt practicing the aerobic exercise.

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