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RESEARCH ARTICLE

THE EFFECT OF LOWER EXTREMITY CLOSED KINEMATICS CHAIN EXERCISE ON POLYCYSTIC OVARIAN SYNDROME WITH MENORRHEA

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Abstract

Aim: This study investigated the effect of lower extremity closed kinematics chain exercise on polycystic ovarian syndrome with menorrhagia.

Method: A total of 35 subject young women with polycystic ovarian syndrome between the age of 18 to 30 years, were recruited over 6 months and randomly allocated to an intervention group (n=35), participated in this observational experimental study. In this study menorrhagia flow were measured at baseline prior to enrolment after 6 months of participation. In an intention-to-treat analysis, we experiment the closed kinematics chain exercise is effective in polycystic ovarian syndrome with menorrhagia.

Result: Result of this study were analysed in terms effect of lower extremity closed kinematics chain exercise on menorrhagia with polycystic ovarian syndrome patient the population of 35 subjects [all females] were served for effect of lower extremity of closed kinematics exercise on patients with menorrhagia in polycystic ovarian syndrome in age group of 18 to 30 yrs. Out of 35 patients Pads count are compared between pre and post result and same in result is seen in Menorrhagia outcome questionnaire score. The study states that pads count and menorrhagia outcome questionnaire score for menorrhagia in polycystic ovarian syndrome patient is showed that improve after lower extremities closed kinematics chain exercise.

Conclusion: The study concluded that conventional physiotherapy with lower extremity closed kinematics chain exercises are effective in reducing menorrhagia in patient with polycystic ovarian syndrome.

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Introduction:-

Polycystic Ovarian Syndrome (PCOS) is not a disease but a mere syndrome. Many researchers have studied polycystic ovarian syndrome and found that there is no proper cause of that, it may occur due to hormonal imbalance or stress, or due to a sedentary lifestyle. The rate of polycystic ovarian syndrome in Indian women has been increasing rapidly.

The symptoms include acne, weight gain, hirsutism, difficulties in fertility, irregular or infrequent periods, immature ovarian eggs that do not ovulate, multiple cysts in the ovary.

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Polycystic ovarian syndrome (mohan,2010) is defined as a state of an ovulation due to chronic hormonal imbalance, sedentary lifestyle, wrong food habits, lack of physical activity, etc.

Prevalence of Polycystic ovarian syndrome:

It affects 10% of women in reproductive age (legro et al, 2007).

Prevalence of types of Menorrhagia:

About 90% of women with oligomenorrhea and 30% with amenorrhea many have this condition³.

The normal average menstrual cycle lasts 29 days with a range of 23-39 days with bleeding episodes lasting 2-7 days. Menorrhagia (prolong or excessive bleeding) or abnormal uterine bleeding (AUB) is the name given to describe any deviation from the normal menstrual cycle.¹⁰

Menorrhagia is a major cause of gynaecological diseases that affect 1–5 women living in Europe and North America in a period of their reproductive age; 9–14% of women in their reproductive age lose 80 mL blood in each cycle.

Average blood loss is 40ml per cycle while in menorrhagia more than 80 ml per cycle blood is loss.

There are many strength and conditioning programs as there are individual clinicians developing the programs. Rehabilitation programs have dramatically change over the past several years.

Lower extremity closed kinematics chain exercises are type of physical exercise in which the distal segment of body, such as the foot or hand is fixed or in contact with a solid surface while the proximal segment is moved.

Muscle contraction includes concentric, eccentric, isometric and isotonic.

Methods:-

Design

We designed the study as a descriptive, experimental study.

Participants

Total 35 patients of polycystic ovarian syndrome with menorrhagia were selected from the outpatient department of physiotherapy

Outcome Measures

Quantitative measurement of monthly menstrual blood loss

-Pads counting

-Menorrhagia outcome questionnaire.

Procedure

The purpose of study and nature of intervention was properly explained to the subject. Written informed consent was taken prior to assessment.

During pretreatment and post treatment assessment of polycystic ovarian syndrome with menorrhagia was done.

Treatment program of exercise was started with a warm up and given for 3 sets 30 repetitions and ends with cool down, 5 session PER WEEK post treatment assessment was taken after completion of session.

8 different lower extremity closed kinematics chain exercises:

1. Squats
2. Vertical squats
3. Forward Lunges
4. Backward Lunges
5. Wall slide
6. Step- up
7. Double leg press in supine

8. Elliptical running



Fig 1:-EllipticalRunning.



Fig 2:- Step Ups.

Results/Discussion:-

The study examined pad counts before and after the treatment of polycystic ovarian syndrome with lower extremity closed kinematics chain exercise. The mean of pad count score of the pretreatment is 3.83 with standard deviation 1.15. Therefore, mean with standard deviation of the pretreatment pad count is 3.83 ± 1.15 . The post treatment result is 3.00 with standard deviation 0.87. Therefore, mean with standard deviation of post treatment pad count is 3.00 ± 0.87 . Therefore approximately 22% reduction in pad count is seen. Hence, there is a slight reduction in pads count in the patient treated. The mean of menorrhhea outcome questionnaire score pretreatment is 44.29 with standard deviation 7.13. Therefore, mean with standard deviation of the pretreatment menorrhhea outcome questionnaire score is 44.29 ± 7.13 . The post treatment result is 52.54 with standard deviation 8.50. Therefore, mean with standard deviation of post treatment menorrhhea outcome questionnaire score is 52.54 ± 8.50 . Therefore, approximately 10% raise in menorrhhea outcome questionnaire score is seen. Hence, there is a slight elevation in menorrhhea outcome questionnaire scores in the patient treated.

Table:- Comparison between pre and post intervention pad counts.

Sr no.	Outcome measure variable	Pretreatment mean \pm SD	Post treatment mean \pm SD	T- value	P- value
1)	Pad counts	3.83 \pm 1.15	3.00 \pm 0.87	6.94	0.0001
2)	Menorrhoea outcome questionnaire score/80	44.29 \pm 7.13	52.54 \pm 8.50	-6.4579	0.0000

Studies show that although menorrhagia rarely threatens life, it has negative effects on women's personal, family, social, and work life and it decreases the quality of life.

During closed kinematics chain movement, however both mono-articular muscle and bi-articular muscles will be active. CKC exercise for 6 weeks significantly improved dynamic balance of healthy adults, while OKC exercise produced a positive, but not significant improvement.¹²

The potential for substitute motions that compensate for and mask strength deficits of individual muscles is likely greater than open-chain exercise.

Conclusion:-

The study aimed to show the effectiveness of conventional physiotherapy with exercises of lower extremity closed kinematics chain exercises on patients suffering from polycystic ovarian syndrome with menorrhoea.

The study concluded that conventional physiotherapy with lower extremity closed kinematics chain exercises are effective in reducing menorrhoea in patient with polycystic ovarian syndrome.

Future Scope

Study can include other symptoms of polycystic ovarian syndrome. Sample size should be more. Other medical professionals should also be included in the study. Abdominal closed kinematics chain exercises should also include in the study.

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