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ORIGINAL RESEARCH

Assessment of role of myoinositol in the management of PCOS and Obesity

[1]Dr.Animesh Biswas, [2]Ananya Biswas

[1]Associate Professor, Department of Dermatology, Santiniketan Medical College and Hospital, Bolpur, Birbhum, West Bengal, India
[2]MBBS Student, Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha, India

Corresponding Author
Dr. Animesh Biswas
Associate Professor, Department of Dermatology, Santiniketan Medical College and Hospital, Bolpur, Birbhum, West Bengal, India
Email: dermaanimesh@gmail.com

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ABSTRACT

Background: A frequent hyperandrogenic condition brought on by increased androgen hormone production is Polycystic Ovary Syndrome. The present study was conducted to assess the role of myoinositol in the management of PCOS and obesity.

Materials & Methods: 58 women from aged 18 to 30 years diagnosed with PCOS were enrolled. Parameters such as improvement in acne, reduction in hirsutism and weight loss, BMI, random sugar level and fasting insulin levels were recorded.

Results: The mean pre- BMI was 27.6 and post BMI was 25.3. RBS was 116.4 and 112.7 and fasting insulin was 17.9 and 16.5 pre- operatively and post- operatively. The difference was significant (P< 0.05). Pre- operatively and post- operatively, regular menstrual cycle was seen in 55% and 78%, oligomenorrhea in 30% and in 17%, polymenorrhea in 9% and 4% and secondary amenorrhea in 6% and 1% respectively. Facial acne was seen in 92% and 54% and improved in 40%. Hirsutism was seen in 70% and 25% and improved in 44%. Ultrasound pelvis had PCO in 98% and 41% and improved in 2% and 59% respectively. The difference was significant (P< 0.05).

Conclusion: Myo-inositol has been shown to be useful in lowering PCO and its associated symptoms in women.

Keywords: polycystic ovary syndrome, obesity, Women

INTRODUCTION

A frequent hyperandrogenic condition brought on by increased androgen hormone production is polycystic ovary syndrome. It has been shown that 20% of women in their reproductive years experience this illness.[1] Classically, PCOS is characterized by clinical and/or biochemical hyperandrogenism and anovulation. Its estimated prevalence is highly variable and ranges between 4.5 and 11.2% in adult women, based on different series.[2] PCOS has been linked to serious long-term health effects, such as type 2 diabetes mellitus and endometrial cancer, even if its precise origin is uncertain. It is also linked to obesity and an increased risk of cardiovascular disease, albeit these factors are not included in the traditional PCOS diagnosis criteria.[3] When compared to findings in control women of similar body weight, PCOS is linked to insulin resistance, hyperinsulinemia, and a higher risk of glycemic profile abnormalities, regardless of body mass index and fat mass proportion. Among PCOS patients, early glucose intolerance can be as common as 40%.[4]

Inositol is a vitamin B family member. Of the nine forms of inositol, myo(MYO) and d-chiro-inositol (DCI) are the kinds that have shown promise in treating PCOS in recent studies. The reason for this is that women with PCOs have a malfunction in their secondary messenger.[5] MYO plays a prominent role in cytogenesis, cell growth and the synthesis and structure of cell membranes. According to preclinical data, MYO acts as a precursor to the synthesis of phosphoinositides, which are involved in the regulation of various functions, including cell proliferation.[6] The present study was conducted to assess the role of myoinositol in the management of PCOS and obesity.

MATERIALS & METHODS

The present study was conducted on 58 women from aged 18 to 30 years diagnosed with PCO. All were

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informed regarding the study and their written consent was obtained.

Data such as name, age, etc. was recorded. Parameters such as improvement in acne, reduction in hirsutism and weight loss, BMI, random sugar level and fasting insulin levels were recorded.

Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table: I Assessment of parameters

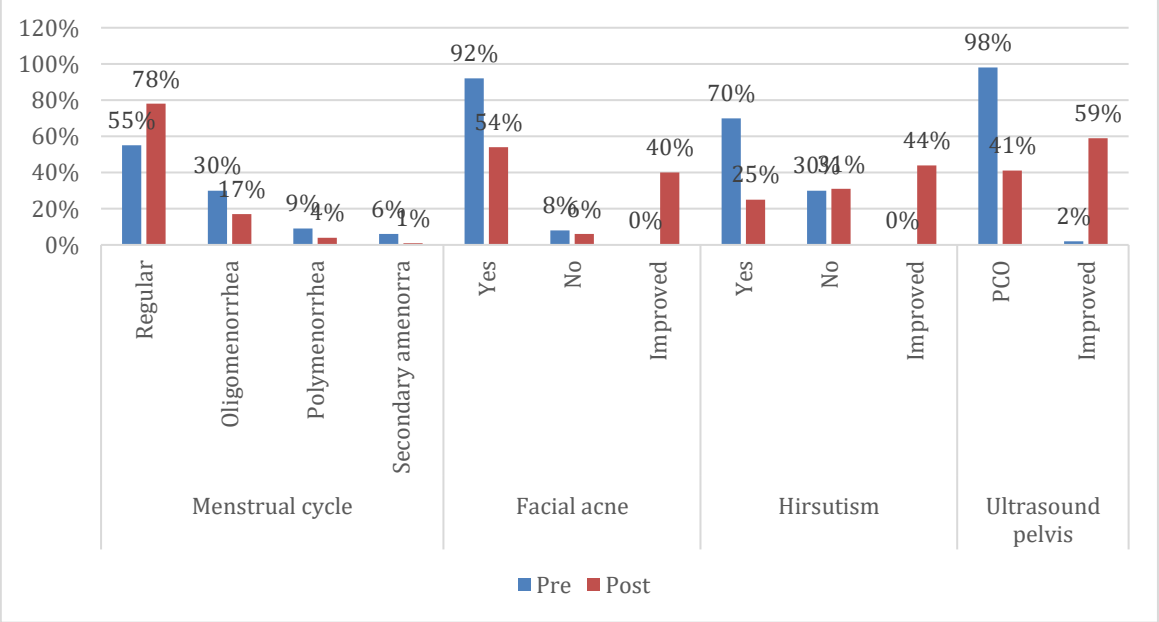
Parameters	Pre	Post	P value
BMI	27.6	25.3	0.03
RBS	116.4	112.7	0.04
Fasting insulin	17.9	16.5	0.01

Table II shows that mean pre- BMI was 27.6 and post BMI was 25.3. RBS was 116.4 and 112.7 and fasting insulin was 17.9 and 16.5 pre- operatively and post- operatively. The difference was significant (P< 0.05).

Table: II Assessment of other parameters

Parameters	Variables	Pre	Post	P value
Menstrual cycle	Regular	55%	78%	0.01
	Oligomenorrhea	30%	17%	
	Polymenorrhea	9%	4%	
	Secondary amenorrhea	6%	1%	
Facial acne	Yes	92%	54%	0.04
	No	8%	6%	
	Improved	0%	40%	
Hirsutism	Yes	70%	25%	0.02
	No	30%	31%	
	Improved	0%	44%	
Ultrasound pelvis	PCO	98%	41%	0.05
	Improved	2%	59%	

Table II, graph I shows that pre- operatively and post- operatively, menstrual cycle was regular seen in 55% and 78%, oligomenorrhea in 30% and in 17%, polymenorrhea in 9% and 4% and secondary amenorrhea in 6% and 1% respectively. Facial acne was seen in 92% and 54% and improved in 40%. Hirsutism was seen in 70% and 25% and improved in 44%. Ultrasound pelvis had PCO in 98% and 41% and improved in 2% and 59% respectively. The difference was significant (P< 0.05).



DISCUSSION

Early research on diabetic women found that irregularities in the control of inositol phospho glycans in their function as second messengers may be the cause of changes in the insulin pathway.[7] These initial findings revealed that insulin resistance in PCOS patients is mediated by changes in inositol phosphoglycan metabolism. When compared to a

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placebo, oral DCI supplementation improved ovulatory function and decreased blood pressure, hyperandrogenism, and hypertriglyceridemia in PCOS women.[8,9] Further research into the potential use of inositol derivatives in assisted reproduction techniques has been spurred by the physiological function they have been shown to play in gametogenesis and human reproduction, as demonstrated by both basic and clinical trials.[10,11] The present study was conducted to assess role of myoinositol in the management of PCOS and obesity.

We found that the mean pre- BMI was 27.6 and post BMI was 25.3. RBS was 116.4 and 112.7 and fasting insulin was 17.9 and 16.5 pre- operatively and post-operatively. Qamar wet al[12] determined the effects of Myo- inositol in young females with polycystic ovarian syndrome. Total 100 patients were recruited based on the specific inclusion criteria of PCO diagnosed by symptoms (body mass index, menstrual irregularity, hirsutism, acne) , biochemical markers (fasting insulin, random blood sugar) and ultrasound findings. Each subject in the study group was given sachet (Myo- inositol 2000 mg and folic acid 400ug) once a day dissolved in glass of water for a duration of 6 months. Improvement in symptoms, biochemical markers and ultrasound findings were reassessed after the completion of 6 months duration. The significant relation (0.001) was observed between the intervention and PCO and its related symptoms. An evident effect was noticed in each individual after the intervention was provided to them. The relatable symptoms such as irregularities in menses, hirsutism, weight and insulin resistance were reduced by significant ratio.

We found that pre- operatively and post- operatively, regular menstrual cycle was seen in 55% and 78%, oligomenorrhea in 30% and in 17%, polymenorrhea in 9% and 4% and secondary amenorrhea in 6% and 1% respectively. Facial acne was seen in 92% and 54% and improved in 40%. Hirsutism was seen in 70% and 25% and improved in 44%. Ultrasound pelvis had PCO in 98% and 41% and improved in 2% and 59% respectively. A study by McBreairty LE[13], diet control and exercise are considered as an additive factor, which supports the efficacy of the myo-inositol in playing an integral role as a secondary messenger in increasing the insulin sensitivity; thus, reduces any disruption in hormonal balance that can lead to obesity

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that Myoinositol has been shown to be useful in lowering PCOS and its associated symptoms in women.

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