

BASIC SCIENCE

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Serum Irisin Level is Elevated in Overweight/Obese Women, but not in Polycystic Ovary Syndrome

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Fazliana M,¹ Liyana AZ,¹ Fatin S,¹ Siti Azrinnah AA,¹ Hanifullah K²

¹Endocrine and Metabolic Unit, Institute for Medical Research, Ministry of Health Malaysia, Setia Alam, Selangor Darul Ehsan

²Cyberjaya University College of Medical Sciences, Cyberjaya, Selangor Darul Ehsan

INTRODUCTION

Polycystic ovary syndrome (PCOS) is the most common endocrinopathy in reproductive-age women. It has been established that adipose tissue acts as an endocrine organ that secretes proinflammatory and anti-inflammatory adipokines. Similarly, skeletal muscle produces secretory molecules, called myokines, from contracting muscle fibers. Irisin, a myokine, is considered to play a role in metabolic disorder and PCOS. Our objectives were to 1) determine circulating irisin levels in women with PCOS and control subjects, 2) examine the relationship of irisin with glucose, insulin, HOMA-IR (Homeostatic Model Assessment of Insulin Resistance) and body mass index (BMI).

METHODOLOGY

Serum samples from 30 women with PCOS and 30 controls (Rotterdam criteria) were measured for irisin, glucose and insulin levels, and HOMA-IR was calculated. BMI for each woman was also calculated (healthy: BMI 18.5-24.9 kg/m², n=29; overweight/obese: BMI ≥25 kg/m², n=31).

RESULTS

Serum irisin level in the overweight/obese group was elevated compared to the group with healthy BMI (p=0.036). HOMA-IR was also higher in the overweight/obese group (p=0.048). However, irisin level in the PCOS group did not show significant difference compared to non-PCOS, although it was increased. No association was found between irisin and insulin, glucose or HOMA-IR.

CONCLUSION

From this limited data, it showed that circulating irisin is a useful marker for obesity. However, we could not suggest that irisin may be a useful biomarker for PCOS.