

THE RELATIONSHIP BETWEEN FOLLISTATIN AND CHRONIC LOW-GRADE INFLAMMATION IN WOMEN WITH POLYCYSTIC OVARY SYNDROME

Mei-Jou Chen¹, Hsin-Fu Chen¹, Shee-Uan Chen¹, Hong-Nerng Ho¹, Yu-Shih Yang¹, Wei-Shiung Yang²

¹ Department of Obstetrics and Gynecology, National Taiwan University Hospital (Taiwan)

² Graduate institute of Clinical Medicine, College of Medicine, National Taiwan University (Taiwan)

Purpose: Follistatin has been proposed as a candidate gene in women with polycystic ovary syndrome (PCOS) and recently found to be associated with anti-inflammatory processes. Little is known about the role of high circulating follistatin concentrations in such women. We investigated the association between circulating follistatin and high-sensitivity C-reactive protein (hsCRP) in women with PCOS.

Materials and Methods: A total of 155 Taiwanese women with PCOS and 37 healthy controls were enrolled in this cross-sectional study. Body mass index (BMI), plasma follistatin, hsCRP, fasting glucose and insulin for the homeostasis model assessment of insulin resistance (HOMA-IR) and hormone profiles were measured and calculated for further analysis.

Results: Circulating follistatin and hsCRP were significantly higher in women with PCOS than controls. Follistatin and hsCRP levels showed a significant correlation with each other in both the PCOS and control groups. Follistatin and hsCRP were also significantly correlated with BMI, HOMA-IR, and the free androgen index (FAI) in the PCOS group, but not in the control group. Multiple stepwise regression analysis demonstrated that hsCRP and the presence of PCOS were the main determinants of the circulating follistatin level after stepwise introduction of age, hsCRP, the presence of PCOS, BMI, HOMA-IR and FAI in the analysis.

Conclusion: Our results demonstrated an independent association between circulating follistatin levels and high hsCRP levels in women with PCOS. This finding suggests that the high follistatin level in women with PCOS might relate to its chronic low-grade inflammatory status and also may possibly act as a potential marker to predict future cardiovascular disease occurrence.

* The result of this study has been accepted for publication in Fertility and Sterility