

Clinical Significance of ADAMTS1, ADAMTS5, ADAMTS9 Aggrecanases and IL-17, IL-23, IL-33 Cytokines in Polycystic Ovary Syndrome

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Objectives:

Polycystic ovary syndrome (PCOS) is one of the most common endocrine disorders among women of reproductive age (1). A disintegrin and metalloproteinase with thrombospondin-like motifs (ADAMTS) are involved in inflammation and fertility(2, 3). The aim of this investigation was to evaluate to serum levels of ADAMTS1, ADAMTS5, ADAMTS9, IL-17, IL-23, IL-33 and to find out the relationship between these inflammatory cytokines and ADAMTSs in PCOS patients.

Methods:

Eighty patients with PCOS and seventy-eight healthy female volunteers were recruited in the present study. Serum ADAMTS and IL levels were determined by a human enzyme-linked immunoassay (ELISA) in all subjects.

Table 1. The serum ADAMTSs and ILs levels of the PCOS patients and controls

Variable	Women with PCOS (n=80)	Healthy controls (n=78)	P
ADAMTS1, ng/ml	7.9(0.5-35.7)	13.7(0.5-56.6)	0.008
ADAMTS5, ng/ml	138.3(6.9-646.4)	116.9(6.8-620.1)	0.39
ADAMTS9, ng/ml	294.7(0.9-1371)	371.2(1.6-2484.5)	0.276
IL-17A, pg/ml	19.9(1.8-213)	7.8(1.5-111.6)	0.006
IL-23, pg/ml	45.4(16.8-302.4)	28.1(1.2-67.5)	0.004
IL-33, pg/ml	150(7.7-777.4)	70.7(2.6-763.1)	0.062

Abbreviations: ADAMTS, a disintegrin-like and metalloproteinase with thrombospondin type-1 motif; IL, interleukin. Values are shown as median.

Results:

The ADAMTS1 level was significantly lower and IL-17A, IL-23 levels were significantly higher in the PCOS patients compared to the controls ($p < 0,05$). We could not find significant difference between the groups in terms of ADAMTS5, ADAMTS9 and IL-33 levels. ADAMTS1 and ADAMTS9 had negative correlations with age, BMI and waist/hip ratio. IL-17A had positive correlation with total cholesterol, low density lipoprotein.

Conclusions:

The understanding of the molecular organization and function of ADAMTS in patients diagnosed with PCOS, which has an unknown pathogenesis, gains an importance and emerging hot topic. Based on the results of the present study, ADAMTSs and ILs might have key roles in PCOS pathogenesis. Further efforts are needed to establish causality for ADAMTS-IL axis.

References:

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