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PCOS: PAB and Inflammatory Cytokines

Evaluation of pro-oxidant-antioxidant balance (PAB) and its association with inflammatory cytokines in polycystic ovary syndrome (PCOS)

T. Artimani ✉, J. Karimi, M. Mehdizadeh, M. Yavangi, E. Khanlarzadeh, M. Ghorbani,
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Abstract

Chronic low-grade inflammation has been suggested as a key contributor of the pathogenesis and development of polycystic ovary syndrome (PCOS). To investigate the association between oxidative stress status and inflammatory cytokines in follicular fluid of 21 PCOS women compared to 21 women with normal ovarian function who underwent intra-cytoplasmic sperm injection. Concentration of IL-6, IL-8, IL-10, and TNF-α was measured using sandwich ELISA. Oxidative stress was examined by measuring total oxidant status (TOS), malondialdehyde (MDA), total antioxidant capacity (TAC), and thiol groups. PCOS women had an elevated concentration of MDA and TOS compared to controls. Levels of TAC and thiol groups were lower in PCOS compared to controls. PCOS patients had a higher concentration of IL-6, IL-8, and TNF-α compared to controls. Concentration of IL-10 was lower in PCOS compared to controls. Significant correlations were found between MDA and TOS concentration with TNF-α and between IL-6 and MDA, IL-8 and TAC, IL-10 and TOS levels and also between IL-10 and TAC levels. TAC and thiol groups were negatively correlated with TNF-α. Increased oxidative stress in PCOS is associated with inflammation which is closely linked. Inflammation can induce production of inflammatory cytokines in this syndrome and directly stimulates excess ovarian androgen production.

Chinese abstract

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Oxidative stress inflammation inflammatory cytokines follicular fluid PCOS

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The study was approved by Hamadan University of Medical Science Ethics Committee (IR.UMSHA.REC.1395.191). All subjects provided written informed consent. All procedures performed were in accordance with the ethical standards of the local research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Disclosure statement

The authors report no conflicts of interest.

Additional information

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