

Endocrinology

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Effect of genistein on pro-inflammatory cytokines and estrogen receptor- β in mice model of endometriosis

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Objective: To investigate the effect of genistein on pro-inflammatory cytokines, NF- κ B activation and estrogen receptor- β expression in a mice model of endometriosis.

Methods: Forty female mice (*Mus musculus*) were divided into eight groups (n=5 each), including the control (untreated) group, endometriosis group and the endometriosis groups were given various doses of genistein (at doses of 50; 100; 200; 300; 400; 500 mg/day). Analysis of TNF- α , IL-1 β , IL-6 and IL-8 levels was done by ELISA technically. Analysis of estrogen receptor- β and NF- κ B were done by immunohistochemistry.

Results: The level of TNF- α , IL-1 β , IL-6, and IL-8 were significantly higher in the EM group compared to the untreated control group ($P < 0.05$). All doses genistein significantly prevented EM-induced increase in TNF- α level ($P < 0.05$), but only at dose of 300 mg/day reach the level in the control group ($P > 0.05$). These increased levels of IL-1 β , IL-6 and IL-8 in the EM group were significantly reduced by all doses of genistein. There were significantly ($P < 0.05$) increased estrogen receptor- β expression and NF- κ B activation in EM group compared to untreated group. Only first and fourth dose significantly ($P < 0.05$) decreased the estrogen receptor- β expression compared to the EM group, to reach a level in the control group ($P > 0.05$). All doses genistein significantly prevented EM-induced increase in NF- κ B activation ($P < 0.05$).

Conclusion: Genistein prohibits the increase in pro-inflammatory cytokines, NF- κ B and estrogen receptor- β expression in a mice model of endometriosis.

Biography

Sutrisno, MD, is an Obstetrics and Gynecologist, Senior Lecturer and Consultant in Gynecology laparoscopy, female reproductive endocrinology and infertility of Brawijaya University Faculty of Medicine, Malang, Indonesia. He is currently, the Head of the Obstetrics and Gynecology section of Saiful Anwar General Hospital, Malang, Indonesia. His main topics of research are endometriosis and immune contraceptions. He published the papers in International journals like *Indonesia Journal of Medicine*.

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