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Effect of Genistein, Leuprolide Acetate and Dienogest towards Progesterone Receptor, IL-8, MMP-2 Expression of Lesions in a Peritoneal Mice Model of Endometriosis

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Abstract : Endometriosis is estrogen-dependent disease that is related to the inflammatory process in the peritoneal cavity. To being activated by pro-inflammatory cytokines, endometriosis is also influenced by the response of progesterone receptors. Effective treatments are required to reduce the endometriosis symptoms. The treatments should affordable, have minimal side effects, and can reduce the recurrence rate. Previous studies have stated that genistein, leuprolide acetate, and dienogest are able to induce the regression of endometriosis cells. The aims of the study is to identify the effect of genistein, leuprolide acetate and dienogest on the expression of the progesterone receptor, IL-8, and MMP-2 in a mice model of endometriosis. This study used a laboratory experimental research design with a post-test only control group design. Female mice (*Mus musculus*) were divided into 7 groups; 1 negative control group, 1 positive control group and 5 experimental groups: endometriosis mice administered by various dose of genistein (0.78 mg/hr, 1.04 mg/hr, and 1.30 mg/hr), leuprolide acetate, and dienogest. On day 30, mice were dislocated and the expression of PR, IL-8, and MMP-2 was assessed with IHK staining. The effect of genistein, leuprolide acetate, and dienogest toward the expression of progesterone receptor, IL-8, and MMP-2 was assessed using one-way ANOVA. The significant effect was seen in the positive control group compared to the treatment group. The delivery of genistein, leuprolide acetate, and dienogest showed an increasing trend on progesterone receptor levels and decreased levels of receptor IL-8 and MMP-2 in the mice model of peritoneal endometriosis lesions.

Keywords : Progesterone receptor, interleukin 8, matrix metalloprotein 2, genistein, leuprolide acetate, dienogest, endometriosis.

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