ABSTRACT

EFFECT OF VARIOUS DOSES OF HYLOCEREUS POLYRHIZUS PEEL ETHANOL EXTRACT TO TUMOR NECROSIS FACTOR-α CONCENTRATION, NUMBER OF MACROPHAGE, AND MATRIX METALLOPROTEINASE-9 EXPRESSION

Experimental Study in Mouse Model of Endometriosis

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On endometriosis, macrophage and TNF-α are found in higher concentration. TNF-α can activate NF-κB pathway and raise the expression of MMP-9 and MCP-1’s genes, which are associated with endometriosis progressivity. NF-κB pathway can be blocked by Hylocereus polyrhizus peel. The objective of this study was to know the effect of Hylocereus polyrhizus peel ethanol extract at dose 0.25; 0.5; and 1 mg/g BW on TNF-α concentration, number of macrophage, and MMP-9 expression on mouse model of endometriosis. This study was a laboratory experimental research. Thirty female mice were used as samples and divided into 5 groups: 1 positive control, 1 negative control, and 3 treatment groups. Positive control and treatment groups were induced as model of endometriosis for 14 days. The next 14 days, Na-CMC 0.5% was given to both control groups, while Hylocereus polyrhizus peel ethanol extract dose 0.25; 0.5; and 1 mg/g BW were given to treatment groups orally. Peritoneal fluid and endometriotic lesion were examined. Result showed that there was no significantly differences on TNF-α concentration among endometriosis groups (p=0.582). While, there were significantly differences on number of macrophage and MMP-9 expression among groups (p<0.05). In conclusion, the number of macrophage and MMP-9 expression are significantly lower in groups treated with Hylocereus polyrhizus peel ethanol extract, but the TNF-α concentration is not.

Keywords: Hylocereus polyrhizus peel ethanol extract, endometriosis, TNF-α, macrophage, MMP-9