EFFECT OF SIMVASTATIN ON MONOCYTE CHEMOATTRACTANT PROTEIN-1 (MCP-1) GENE EXPRESSION IN ENDOMETRIOSIS PATIENTS

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Introduction: Recent data have shown that immunologic dysfunction associate with endometriosis, specifically cell innate immunity. Simvastatin, a lowering cholesterol drug, acts by inhibition of HMG-CoA reductase resulting in a decrease of mevalonate level, a precursor of cholesterol and Monocyte chemoattractant protein-1 (MCP-1). This study was conducted to investigate the effect of pre-operative oral simvastatin administration on MCP-1 gene expression and serum MCP-1 in patients with endometriosis.

Material and Methods: A prospective randomized controlled study was conducted at Endocrinology unit, Department of Obstetrics and Gynecology, Faculty of Medicine Ramathibodi Hospital. Forty women (mean age 18-45 years old) with endometriosis scheduled for laparoscopic surgery. Patients were randomly assigned to either treatment (group A) 20 mg per day oral simvastatin administration for 2 weeks before surgery or control (group B). Serum was collected before and after treatment and tested for MCP-1. Endometriotic tissues were investigated and quantitated for MCP-1 transcript by real-time PCR. Main Outcome Measures were MCP-1 and CD 68 gene expression on endometriotic tissue. Correlation between serum MCP-1 and MCP-1 gene expression was also analysed.

Result(s): MCP-1 gene expression was 3.67 ± 3.15 in group A and 3.68 ± 2.69 in group B (P=0.99). There was no correlation between MCP-1 expression and serum MCP-1 levels (r=0.2). CD 68 expression was higher in treatment group than control group, close to statistically significant (P=0.055).

Conclusion(s): Treatment with two weeks of oral simvastatin 20 mg/day did not inhibit MCP-1 gene expression and might activate or recruit macrophages into the endometriotic lesion.

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