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Methylation level of plasminogen activator inhibitor- 1 (PAI-1) in endometriosis

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Introduction: Endometriosis that affects 10% women in the reproductive group is characterized by the presence of endometrium-like tissue outside of the uterine cavity, primarily in the ovaries. Endometriosis-associated pain can be caused by peritoneal inflammation, specific innervation, adhesion formation and cell invasion; whereas plasminogen activator system plays a role in this invasion. It has been known that plasminogen activator inhibitor-1 (PAI-1) level is higher in endometriotic cells than normal endometrial cells. In this study, we determined the methylation level of plasminogen activator inhibitor-1 (PAI-1) in association with endometriosis.

Methods: We collected 16 ovarian endometriosis samples obtained from patients, as compared to 12 normal endometrium tissues obtained from healthy women. Each participant gave informed consent. We used methylation specific PCR (MSP) and ImageJ software to analyze the methylation level of PAI-1 gene.

Results: We found that the methylation level of PAI-1 in endometriotic cells was lower 37.95%, than normal endometrial cells. In addition, there was a significantly different methylation level of PAI-1 gene between endometriosis (24.02 ± 7.22) and normal endometrium (61.97 ± 9.62) ($p < 0.05$).

Conclusion: This study showed there was a hypomethylation in the promoter region of PAI-1 gene and might contribute in the high level of PAI-1 in endometriosis tissue.

Biography

Ririn Rahmala Febri received her Master degree from Biomedical Sciences, Faculty of Medicine, Universitas Indonesia (FMUI). In 2016, she joined the Human Reproductive, Infertility, and Family Planning Cluster, Indonesian Medical Education and Research Institute (IMERI) FMUI. She has been involved in various science projects and researches. Her current research interest includes epigenetics, cell adhesion and gene expressions, especially in the reproductive fields.

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