Pengaruh oktil galat terhadap populasi sel SUSD2+ , ekspresi mRNA IDO1, dan Caspase3 pada endometriotic mesenchymal stem-like cells = Effect of octyl gallate on SUSD2+ cell population, expression of IDO1 and Caspase3 mRNA in endometriotic mesenchymal stem-like cells"

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Abstrak

Mesenchymal Stem cells (MSCs) endometrium dengan marka spesifik SUSD2 berpotensi menjadi salah satu sumber sel yang menginisiasi lesi ektopik pada endometriosis. MSCs pada ektopik (EK) dan eutopik endometrium (EU) pasien endometriosis diketahui memiliki karakteristik yang lebih invasif,, di antaranya dengan ekspresi indoleamine 2,3 dioxygenase (IDO1) yang lebih tinggi dibandingkan endometrium normal (EN). IDO1 menekan ekspresi p53, protein terkait apoptosis, menyebabkan viabilitas sel endometriosis meningkat. Oktil galat merupakan senyawa pleiotropik yang terbukti mampu menginduksi apoptosis pada sel endometriosis melalui pengamatan mikroskop konfokal. Penelitian ini bertujuan untuk mengetahui pengaruh OG terhadap ekspresi SUSD2 dan jalur antiapoptosis sel melalui IDO1. Bahan biologis tersimpan sel endometriosis positif marka MSCs CD73, CD90, dan CD105 digunakan dalam penelitian. Ekspresi protein SUSD2 diinvestigasi dengan flowcytometry. Ekspresi mRNA IDO1 dan caspase3 diinvestigasi dengan real time RT-PCR. Hasil menunjukkan gambaran penurunan ekspresi SUSD2 pasca-pemberian OG. Terdapat gambaran peningkatan mRNA IDO1 tanpa diikuti penurunan mRNA caspase3 pada EK dan EN, namun tidak pada EU. Kesimpulan penelitian ini adalah oktil galat diduga menginduksi apoptosis, tetapi tidak melalui jalur antiapoptosis IDO1.

.....Endometrial mesenchymal stem cells (MSCs) with specific marker SUSD2 is potential to be the sources of the cells that initiate ectopic lesions in endometriosis. MSCs in ectopic (EC) and eutopic endometrium (EU) of endometriosis patients were known to have more invasive characteristics, including higher expression of indoleamine 2,3 dioxygenase (IDO1) than normal endometrium (EN). IDO1 suppresses p53 expression, a protein associated with apoptosis, causing increased endometriosis cell viability. Octyl gallate is pleiotropic compound that has been shown to induce apoptosis in endometriosis cells as seen by confocal microscopy observation. This study aims to determine the effect of OG on the expression of SUSD2 and cell antiapoptotic pathway through IDO1. Stored biological material of endometriosis cell with positive MSCs markers CD73, CD90, and CD105 was used in the study. SUSD2 protein expression was investigated by flowcytometry. IDO1 and caspase3 mRNA expression were investigated with real time RT-PCR. Results showed a trend of decreased SUSD2 expression post-OG administration. There was a trend of increased IDO1 mRNA, but was not followed by a trend of decreased caspase3 mRNA in EK and EN. The conclusion of this study is octyl gallate was suspected to induce apoptosis through a mechanism other than IDO1 antiapoptotic pathway.