Pengaruh Pemberian Senyawa Sintetik Oktil Galat terhadap Proses Inflamasi dan Stres Oksidatif pada Tikus Model Endometriosis = Effect of Octyl Gallate Synthetic Compound on The Inflammatory Process and Oxidative Stress in Rat Endometriosis Model.

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Abstrak

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Endometriosis merupakan penyakit ginekologi ditandai dengan implantasi jaringan endometrium di luar rongga uterus, berhubungan erat dengan proses inflamasi kronis. Stres oksidatif menjadi aktivator terjadinya proses inflamasi kronis di endometriosis. Oktil galat terbukti lebih efektif menekan proses inflamasi dibandingkan asam galat dan heptil galat pada sel kultur primer endometriosis. Penelitian ini bertujuan menganalisis pengaruh oktil galat pada proses inflamasi dan stres oksidatif pada tikus Wistar model endometriosis. Tiga puluh ekor tikus Wistar dibagi menjadi tiga kelompok, yaitu kelompok uji, kontrol endometriosis dan kelompok normal. Kelompok uji dilakukan autotransplantasi lalu diberikan suspensi oktil galat dan CMC selama satu bulan. Kelompok endometriosis dilakukan autotransplantasi lalu diberikan larutan CMC selama satu bulan, sedangkan kelompok normal hanya dilakukan laparotomi. Seluruh tikus kemudian dieuthanasia, dari kelompok uji dan kontrol endometriosis diambil jaringan endometriosisnya sedangkan dari kelompok sehat diambil jaringan endometriumnya untuk dianalisis. Analisis MDA (Malondialdhyde) dan SOD (Superoxide Dismutase) dilakukan secara spektofotometri, kadar NF-B dengan ELISA dan IL-1 (Interleukin-1 Beta) dengan LUMINEX. Pemberian oktil galat pada kelompok uji tidak menurunkan kadar MDA namun berpotensi menekan kondisi stres oksidatif dengan meningkatkan kadar SOD. Oktil galat terbukti menekan aktivasi NF-B secara signifikan, namun tidak menekan kadar IL-1. Oktil galat berperan sebagai antiinflamasi pada tikus Wistar model endometriosis dengan cara induksi peningkatan SOD dan hambatan langsung pada translokasi nuklear NF-B.
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ABSTRACT
Endometriosis is a gynecological disease characterized by the implantation of endometrial tissue outside the uterine cavity, related to the chronic inflammatory process. Oxidative stress activates the occurrence of chronic inflammatory in endometriosis. Octyl gallate is more effective in suppressing the inflammatory process than gallic acid and heptil gallate in primary endometriosis culture cells. This study aimed to analyze the effect of octyl gallate on the inflammatory process and oxidative stress in endometriosis Wistar rat models. 30 Wistar rats were divided into three groups, the test group, endometriosis control and normal groups. The test group was autotransplantated and then given a suspension of octyl galate and CMC for one month. The endometriosis group was autotransplanted and then given a CMC solution for one month, while the normal group only underwent laparotomy. All rats were then euthanized, from the test and endometriosis group the endometriosis tissue was taken while from the normal group endometrial tissue was taken for analysis. MDA and SOD were measured using spectrophotometry, NF-B with ELISA and IL-1 with LUMINEX. Induction of octyl gallate in the test group did not reduce MDA levels but could potentially suppress oxidative stress conditions by increasing SOD levels. Octyl gallate significantly inhibit the NF-B

activation, but not suppressing IL-1 levels significantly. Octyl gallate act as anti-inflammatory agent in endometriosis Wistar rat model through the enhancement of SOD and direct inhibition to nuclear translocation of NF-B.