Efek antioksidan yang terkandung dalam bekatul terhadap kadar malondialdehid pada testis tikus yang diinduksi karbon tetraklorida = The effect of antioxidant contained in rice bran on malondialdehyde level in rat s testis induced by carbon tetracloride

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Abstrak

[Fenomena stres oksidatif berperan dalam berbagai patogenesis penyakit termasuk infertilitas pada pria. Meningkatnya peroksidasi lipid pada membran sel spermatozoa menyebabkan penurunan kualitas sperma. Tingkat kerusakan sel akibat stress oksidatif dapat diukur dengan kadar malondialdehid (MDA). Bekatul merupakan hasil samping proses penggilingan padi yang diketahui memiliki kandungan antioksidan; vitamin E dan oryzanol. Penelitian ini bertujuan untuk mengetahui pengaruh bekatul terhadap kadar MDA testis tikus yang diinduksi CCl4. Dua puluh empat sampel tikus dibagi ke dalam 6 kelompok; kontrol (K), bekatul 200 mg/kg BB (P1), bekatul 400 mg/kg BB (P2), CCl4 (P3), 200 mg/kg BB+ CCl4 (P4), dan 400 mg/kg BB+CCl4 (P5). Tikus diadaptasi selama 7 hari. Pemberian bekatul pada kelompok P1, P2, P4, dan P5 dilakukan selama 8 hari setelah adaptasi. Sedangkan induksi CCl4 0,55mg/kg BB pada kelompok P3, P4, dan P5 dilakukan pada hari ke 9-11. Pemberian CCl4 pada kelompok P3 menghasilkan kadar MDA yang lebih tinggi bermakna bila dibandingkan dengan kelompok kontrol (p=0,028). Pemberian bekatul pada kelompok P2 menunjukkan kadar MDA yang lebih rendah bermakna dibandingkan kontrol (p=0,046). Kadar MDA yang lebih rendah secara signifikan juga terlihat pada kelompok P4 dan P5 dibandingkan kelompok P3 dengan nillai p berturut-turut 0,037 dan 0,005. Hasil penelitian menunjukkan pemberian bekatul dapat menghasilkan kadar MDA yang lebih rendah pada testis tikus yang diinduksi CCl4. Ini membuktikan potensi bekatul sebagai agen protektif terhadap peroksidasi lipid pada jaringan testis tikus.;The phenomenon of oxidative stress involves in pathogenesis of several diseases including infertility in men. High lipid peroxidation on membrane of spermatozoa decreases sperm quality. Cell damage caused by oxidative stress can be measured with malondialdehyde (MDA). Rice bran as a byproduct of the rice milling process is known to have antioxidant properties;vitamin E and oryzanol. This research aimed at evaluating the effect of rice bran on MDA level in rat?s testes induced by CCl4. Twenty four male Sprague dawley rats were divided into six groups; Untreated (K), rice bran 200 mg/kg BW (P1), rice bran 400 mg/kg BW (P2), CCl4 (P3), rice bran 200 mg/kg BW+ CCl4 (P4), and rice bran 400 mg/kg BW+ CCl4 (P5). Rats were adapted on 7 days. Group P1, P2, P4, and P5 were administered with rice bran on 8 days after adaptation. Group P3, P4, and P5 were administered with CCl4 0,55mg/kg BW from day 9-11. Administration of CCl4 on group P3 caused a greater MDA level compared to the untreated group (p=0.028). Administration of rice bran on group P2 showed a lower MDA level compared to the untreated group (p=0.046). The MDA levels of group P4 and P5 were also significantly lower compared to group P3 with p value consecutively 0.037 and 0.005. This study shows that the administration of rice bran results in a lower MDA level in rat?s testis induced by CCl4. It proves the potency of rice bran as protective agent against lipid peroxidation in rat?s testes., The phenomenon of oxidative stress involves in pathogenesis of several diseases including infertility in men. High lipid peroxidation on membrane of spermatozoa decreases sperm quality. Cell damage caused by oxidative stress can be measured with malondialdehyde (MDA). Rice

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