

INTISARI

PENGARUH ABON KULIT PISANG (*MUSA BALBISIANA COLLA*) TERHADAP KADAR KORTISOL DAN TRIGLISERIDA DARAH PADA TIKUS WISTAR YANG DIINDUKSI STRES KRONIS

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Latar Belakang. Stres adalah kondisi ketidakseimbangan homeostasis sel dan hormon yang mengaktivasi *hypothalamic-pituitary-adrenal* (HPA) axis dan sistem saraf autonom. Kondisi stres akan mempengaruhi fungsi metabolisme, endokrin, dan respon inflamasi. Pelepasan glukokortikoid adrenal yakni kortisol merupakan respon dari kondisi stres di dalam tubuh. Terganggunya perpindahan lipid akan mengganggu fungsi hepar sehingga akan meningkatkan kadar trigliserida dalam darah. Pemanfaatan kulit pisang yang kaya akan kandungan asam amino dan antioksidan triptofan diharapkan mampu mengembalikan homeostasis tubuh yang tidak seimbang akibat dari stres.

Tujuan Penelitian. Untuk mengetahui pengaruh induksi *Chronic Mild Stress* (CMS) dan pemberian suplementasi abon kulit pisang kepok kuning (*Musa balbisiana*) terhadap kadar kortisol dan trigliserida darah pada tikus.

Metode Penelitian. 20 ekor tikus wistar jantan diinduksi CMS untuk membuat hewan model CMS, dibagi menjadi 5 kelompok. Pemberian induksi CMS dilaksanakan selama 6 minggu dengan pemberian abon kulit pisang selama 4 minggu. Pemeriksaan kadar kortisol darah dan trigliserida darah diukur sesudah induksi CMS dan setelah pemberian abon kulit pisang, pengukuran durasi *immobility time* dilakukan dengan metode TST dan durasi *Escape Latency Time* dengan metode MWM. Seluruh data yang diperoleh diolah menggunakan software SPSS versi 27.

Hasil Penelitian. Kadar rerata kortisol darah *pre-test* < kadar rerata kortisol darah *post-test*. Kadar kortisol darah antara kelompok KPTA dengan kelompok KPA 15 memiliki nilai $p < 0,05$. Kadar rerata trigliserida darah *pre-test* > kadar rerata trigliserida darah *post-test*. Kadar trigliserida darah antara kelompok KPTA dengan kelompok KPA 30 dan KPA 60 memiliki nilai $p < 0,05$. Rerata durasi *Immobility time* pada kelompok KPTA lebih panjang dibandingkan dengan kelompok lain dengan nilai $p < 0,05$. Rerata durasi *escape latency time* pada uji MWM lebih cepat pada kelompok tikus yang diberikan suplementasi abon kulit pisang.

Kesimpulan. Pemberian suplementasi abon kulit pisang kepok kuning meningkatkan kadar kortisol darah, menurunkan kadar trigliserida darah, durasi *immobility time* yang lebih singkat, dan durasi *escape latency time* pada uji MWM yang lebih singkat.

Kata Kunci: Stres, Kortisol, Trigliserida, Abon Kulit Pisang

ABSTRACT

THE EFFECT OF BANANA (*MUSA BALBISIANA COLLA*) PEEL FLOSS TOWARD THE LEVEL OF BLOOD CORTISOL AND TRIGLYCERIDES ON THE CHRONIC STRESS-INDUCED WISTAR RATS

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Background. Stress is a condition of an imbalanced homeostasis of cells and hormones that activate the hypothalamic-pituitary-adrenal (HPA) axis and the autonomic nervous system. Stressful body condition will affect the function of metabolism, endocrine, and inflammatory response. The release of adrenal glucocorticoids, the cortisol, is a response to stressful conditions in the body. Furthermore, any inflammations occurred in the stress response will result in the increase of lipid metabolism, causing the triglyceride storage in the liver to be disrupted. Disruption in transferring lipid will affect the liver function and increase the triglyceride levels in the blood. The use of banana peels enriched with amino acids and tryptophan antioxidants is expected to restore the imbalanced homeostasis in the body due to stress.

Objectives. To determine the effect of induction of Chronic Mild Stress (CMS) and supplementation of shredded kepok kuning banana skin (*Musa balbisiana*) on blood cortisol and triglyceride levels in rats.

Methods. 20 male wistar rats were induced by CMS to make a CMS model animal, divided into 5 groups. The administration of CMS induction was carried out for 6 weeks with the provision of shredded banana peels for 4 weeks. Examination of blood cortisol levels and blood triglycerides were measured after CMS induction and after administration of shredded banana peels, immobility time measurements were performed using the TST method and Escape Latency Time using the MWM method. All data obtained were processed using SPSS version 27 software.

Results. The mean pre-test blood cortisol level < the post-test mean blood cortisol level. Blood cortisol levels between the KPTA group and the KPA 15 group had a $p < 0.05$. The mean pretest blood triglyceride level > the post-test mean blood triglyceride level. Blood triglyceride levels between the KPTA group and the KPA 30 and KPA 60 groups had a p value < 0.05 . The average duration of immobility time in the KPTA group was longer compared to the other groups with a $p < 0.05$. The average duration of escape latency time in the MWM test was faster in the group of rats supplemented with shredded banana peels.

Conclusion. The giving of *kepok kuning* shredded banana peels increased blood cortisol levels, decreased blood triglyceride levels, shorter duration of immobility time, and shorter duration of escape latency time on the MWM test.

Keywords: *Stress, Cortisol, Triglycerides, Shredded Banana Peels*