

**PENGARUH PEMBERIAN KAFEIN TERHADAP KADAR
TRIGLISERIDA PADA TIKUS YANG DIBERI *EXERCISE***
Imam Bagus Gustoro¹, Raden Edi Fitriyanto², Asri Hendrawati²

¹Mahasiswa Program Studi Kedokteran, Fakultas Kedokteran Universitas Islam
Indonesia

²Departemen Biokimia dan Riset, Fakultas Kedokteran Universitas Islam
Indonesia

INTISARI

Latar Belakang: Kafein sering ditemukan dalam bahan-bahan sekitar kita seperti kopi, teh, minuman energi dan soda. Dalam dunia olahraga banyak digunakan peningkat performa latihan dan penunda kelelahan. Hal ini disebabkan kerja kafein dalam meningkatkan proses lipolisis dalam tubuh. Lipolisis akan menurunkan kadar trigliserida dalam tubuh yang apabila proses ini berlebihan dapat menyebabkan gangguan-gangguan seperti penyakit kardiovaskular, stroke, dan penyakit jantung.

Tujuan: Penelitian ini bertujuan untuk mengetahui pengaruh kafein terhadap kadar trigliserida tikus yang diberi *exercise*.

Metode: Penelitian menggunakan eksperimental murni dengan *pretest posttest control group design*. Tikus Wistar jantan 15 ekor dibagi dalam 3 kelompok, kontrol (KF0), kafein dosis optimal (7,56 mg/200grBB)(KF1), dan kafein dosis tinggi(11,34 mg/200grBB)(KF2). Pengambilan darah untuk pengukuran kadar trigliserida dilakukan sebelum perlakuan dan setelah *exercise*. Perlakuan yaitu kafein sesuai kelompok satu jam sebelum dilakukan *exercise*. *Exercise* berupa berlari di *running wheel* dilakukan semua kelompok selama 25 menit. Setelah itu, dilakukan data pengukuran kadar trigliseridadikumpulkan dan analisis data dengan *software* statistik.

Hasil: Rata-rata kadar trigliserida tikus *pretest* (mg/dl) $91,2 \pm 6,05$ (KF0), $74,4 \pm 6,18$ (KF1), $139,6 \pm 27,1$ (KF2), dan rata-rata kadar trigliserida tikus *posttest* (mg/dl) $89,0 \pm 6,12$ (KF0), $69,8 \pm 5,97$ (KF1), $133,2 \pm 26,5$ (KF2). Hasil analisis pada tiap kelompok perlakuan menunjukkan terdapat perbedaan signifikan antar semua kelompok ($p < 0,01$). Kelompok KF2 memiliki rerata penurunan paling tinggi dibandingkan kelompok KF0 dan KF1.

Kesimpulan: Pemberian kafein pada tikus yang diberi *exercise* menurunkan kadar trigliserida darah tikus. Penurunan yang paling tinggi terjadi pada pemberian dosis kafein tinggi.

Kata Kunci: Trigliserida, kafein, *exercise*, lipolisis

THE EFFECT OF GIVING CAFFEIN TO TRIGLICERIDE CONCENTRATION IN *EXERCISE* RATS

Imam Bagus Gustoro¹, Raden Edi Fitriyanto², Asri Hendrawati²

¹Medical Student, Faculty of Medicine, Universitas Islam Indonesia

²Departement Biochemistry and Research, Faculty of Medicine, Universitas Islam
Indonesia

ABSTRACT

Background: Caffeine is commonly found in beverages around us, coffee, tea, energy drinks, and soda for instance. In the sport field, caffeine is commonly used to increase the exercise performance and fatigue-delaying. This could be caused by caffeine's mechanism of action in elevating the lipolysis process in our body. Lipolysis will decline the triglyceride level in our body; when this process is excessively done, it might cause several diseases such as cardiovascular disease, stroke, and heart disease. This study has purpose to know the effect of the caffeine on triglyceride levels on the exercise-given rats.

Objective: This study has purpose to know the effect of the caffeine on triglyceride levels on the exercise-given rats.

Method: This is a pure experimental study with pretest posttest control group design. 15 male wistar rats were divided into three groups (Control (Kf0); Optimal caffeine dose ((7,56 mg/200grBB)(KF1),); high caffeine dose (11,34 mg/200grBB)(KF2).) The blood sampling taking for triglyceride level measurement was done before the treatment and after the exercise. Exercise was defined as running wheel was done in all groups for 25 minutes. After that, the data measurement of the triglyceride levels was collected and analyzed with statistic software.

Result: The mean levels of triglyceride on pretest treatment (in (mg/dl)) were $91,2 \pm 6,05$ (KF0), $74,4 \pm 6,18$ (KF1), $139,6 \pm 27,1$ (KF2) respectively, in other hand, the mean levels of triglyceride on post-test treatment (in (mg/dl)) were $89,0 \pm 6,12$ (KF0), $69,8 \pm 5,97$ (KF1), $133,2 \pm 26,5$ (KF2). The result of the analysis on each treatment-given group shown a significant difference among each group ($p < 0,01$). The KF2 group has the highest mean declining level of triglyceride compared to KF0 and KF1.

Conclusion: The administration of caffeine on the exercise-given rats could lower triglyceride levels in rats' blood. The highest decline occurred in high caffeine dose administration..

Keyword: trglycerides, caffeine, *exercise*,lypolysis