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Biochemical Changes and Ponderal Weight After Administration of a Hyperlipidic Diet in Swiss Mice

Silva Júnior, P.R¹; Almeida, L.R.B²; Teófilo, P.B.E³; Arruda, I.T.S⁴; Oliveira, T.K.B⁵

^{1,2,3}Student in Medicine by the Faculty of Medical Sciences of Campina Grande (FCM-CG); ⁴PhD Student in Biotechnology of Health, focusing on Genetics, by the RENORBIO Program. ⁵Ph.D. Student of the Graduate Program in Agricultural Engineering, Federal University of Campina Grande – UFCG. Professor at the Faculty of Medical Sciences of Campina Grande (FCM-CG).

ABSTRACT

A Introduction: The type of diet influences the metabolic functions and leads to changes in weight and/or body composition. Researchers have been trying to develop animal models in order to mimic the metabolic states of disorder that occur in humans. **Aim:** To analyze the metabolic changes after administration of a hyperlipidic diet in Swiss mice. **Methods:** Twenty male Swiss mice weighing 39 - 44g with 120 days old were used. The control group (CG) was maintained on a standard balanced diet (Presence®: 23% protein, 4% fat, 50% carbohydrate and 23% other components), whereas the experimental group (EG) received a special diet with formulation with a high fat content (37.20% encephalon powder, 41.86% crushed feed, 18.60% lard and 2.32% cellulose). The Protocol was approved by the Ethics Committee on Animal Use (CEUA) of the Center for Higher Education and Development (CESED), with Protocol No. 2010/4573. The statistic was performed by Student's t-test. **Results:** The initial weight of the animals of the GC and GE groups were 383g and 389g, respectively, and the final weight was 385g and 424g, respectively, with a difference of 39g more for the group that received only the hyperlipidic diet. Cholesterol analysis were 57.4 ± 5.38 for GC and 100.2 ± 10.43 for the GE, where $p = 0.0013$, whereas for triglycerides values observed were of 50.4 ± 16.62 and $91, 91,6 \pm 30.6$ respectively. **Discussion:** The hyperlipidic diet significantly increased animal weight, plasma triglyceride concentration, and cholesterol. As demonstrated in other studies this diet was also efficient in increasing body adiposity in this study. **Conclusion:** The hyperlipidic diet elaborated in this study demonstrates as an excellent model for induction of obesity and dyslipidemia in mice. **Keywords:** High-fat Diet; Mice; Cholesterol; Triglycerides

*Correspondence to Author:

Silva Júnior, P.R

Student in Medicine by the Faculty of Medical Sciences of Campina Grande (FCM-CG)

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