Abstract

Objectives: The importance of essential fatty acids, in particular the omega-3 family, in the central nervous system development of newborns is well documented. The flaxseed (Linum usitatissimum) is considered one of the best vegetable sources of omega-3 fatty acids. The influence of omega-3 fatty acids from flaxseed on the brain development of newborn rats was evaluated. Material and methods: Pups of the Fl generation were obtained from 18 female Wistar rats divided in 3 groups (n = 6), FG: fed with diet based on Flaxseed added with casein, CG: Casein, and MCG: Modified Casein supplemented with fibers and soybean oil. Newborn pups were weighted and submitted to euthanasia; brains were collected for evaluation of weight and lipid profile through gaseous chromatography. Results: Significant increase in brain weight (39%) and relative brain weight (37%) was verified in pups from mothers fed with flaxseed dieto The omega-3 (n-3) fatty acids from the flaxseed were found in abundance in the diet made with this oleaginous and also significant increase in docosahexaenoic acid (DHA) (38 %), as well as in total of omega-3 (n-3) fatty acids (62%). Conclusion: Maternal diet of flaxseed during pregnancy influences the incorporation of omega-3 fatty acid in the composition of brain tissue, assuring a good development of this organ in newborn rats.

Keywords

Brain, Essential fatty acids, Flaxseed, Omega-3, Rats.