ABSTRACT

Master's thesis 38 pp., 9 tables, 52 sources.

KEY WORDS: ANTINOCICEPTIVE ACTION, LIPID AUTOCOLIDS, FATTY ACID ETHANOLAMIDES, PERIPHERAL NEUROPATHY, PREDICTION ALGORITHM.

Purpose: to develop an algorithm for predicting the antinociceptive effects of lipid autocoids of a number of fatty acid ethanolamides and their analogues in experimental peripheral neuropathy.

Object of study: antinociceptive effect of lipid autocoids of a number of ethanolamides of fatty acids.

Research methods: surgical (sciatic nerve cutting), behavioral (assessment of the threshold of the nociceptive reaction and the latent period of the nociceptive reaction), pharmacological (intravenous administration of sodium thiopental; subcutaneous administration of ceftriaxone; intragastric administration of N-CEA, N-BEA, N-REA, N- PEA, N-PEA+SEA(1:1), N-PEA+SEA(1:1)+solubilizer, FAEs PM and FAEs PM+solubilizer).

In the presented experimental work, the effect of N-BEA, N-CEA, N-REA, N-PEA, N-PEA+N-SEA, N-PEA+N-SEA+solubilizer, FAEs PM and FAEs PM+solubilizer on changes in the values of the latency period of nociceptive reactions and the threshold of nociceptive reactions in rats was studied with experimental peripheral neuropathy. It has been established that the use of N-CEA, N-REA, N-PEA+N-SEA+solubilizer and FAEs PM+solubilizer significantly increases the values of the studied parameters in animals with peripheral neuropathy. N-BEA, N-PEA, N-PEA+N-SEA and FAEs PM significantly increased only the threshold of nociceptive reactions of the ipsilateral limb. Based on the data obtained, an algorithm has been developed (in the Python programming language) that makes it possible to predict the antinociceptive effects of lipid autocoids of a number of fatty acid ethanolamides and their analogues. The algorithm functions as a simulator, allowing reliable measurements to be obtained without physical experiments, making it a valuable tool for learning. At the same time, the use of the algorithm simplifies the search for effective antinociceptive substances, automates experiments and reduces the number of animals required for research, allowing trends to be monitored on fewer samples.