

Results and discussion. Our gut is home to approximately 100 trillion micro-organisms; it is such a big number that the human brain can not really comprehend it. In pathologic conditions, the permeability of the epithelial lining may be compromised allowing the passage of toxins, antigens, and bacteria in the lumen to enter the blood stream creating a “leaky gut.”

In individuals with a genetic predisposition, a leaky gut may allow environmental factors to enter the body and trigger the initiation and development of autoimmune diseases including chronic fatigue syndrome, fibromyalgia, arthritis, allergies, asthma, acne, obesity and even mental illness which are the major and common human ailments of the 21st century. The symptoms of leaky gut can vary drastically from person to person and some people can have gut problems for a long time without symptoms, the gut flora promotes normal gastrointestinal function, provides protection from infection, regulates metabolism and comprises more than 75% of our system.

However additional studies are still required for further clinical evidences in human as major health problems resulted from intestinal permeability.

Conclusion. Recent reports have shown that a combination of principles from GAPS (gut and psychology diet's) and SCD (specific carbohydrate diets) that focuses on reducing inflammation, as well as control of excess antibiotics usage, are potential method for regulating intestinal permeability, Probiotics can reverse the leaky gut by enhancing the production of tight junction proteins in susceptible individuals.

EVALUATION OF SPASMOLITICAL ACTIVITY OF CHINOCARB ON RAT ISOLATED FRAGMENTS OF THE THORACIC AORTA AND RENAL ARTERY IN VITRO

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Introduction. According to the results of previous studies, the substance of chinocarb with 7-day intragastric administration in a dose of 10 mg/kg of experimental hypertensive rats has antihypertensive effect, the severity and duration of which is slightly inferior to the activity of enalapril (5 mg/kg) and is equal to the corresponding effects of hydrochlorothiazide (10 mg/kg). The realization of hypotensive effects of a substance is not accompanied by side effects from the electrolyte and metabolic profile of the blood, which distinguishes it favorably from the reference drugs.

Aim of this work was *in vitro* on the model of an isolated fragment of the thoracic aorta and renal artery of rats under the conditions of the previous phenylephrine restriction to investigate the effect of the new derivative anilide quinoline-2-carboxylic acid (chinocarb) as a myotropic antispasmodic.

Materials and methods. The study of myotropic spasmolytic activity of chinocarb was performed on rats of both sexes of the Wistar line weighing 150-190 g. The isolated rings of the thoracic segment of the aorta and rings of the right renal artery were used in the studies. The level of spasmolytic effect was calculated as a percentage relative to the level of maximum tonic pressure caused by phenylephrine (1 μ mol/L). To calculate the average effective concentration (log EC₅₀), a graphical method for constructing the dose-effect curves using Origin 7.5 (OriginLab Co., USA) was used.

Results and discussion. Studies have shown that for the drotaverine the concentration range used to construct the dose-effect curve was in the range of 10⁻¹⁰ to 10⁻² mol/L. The spasmolytic effect began to manifest at a concentration of 10⁻¹⁰ mol/L (0,09 \pm 0,0005 mN). The maximum value was recorded at a concentration of 10⁻² mol/L (0.11 \pm 0.0003 mN), EC₅₀ thus comprised 1.63 \times 10⁻⁸ \pm 0.39 \times 10⁻⁸ mole of muscle cells of the thoracic aorta/L, p<0.05, on muscle cells of the renal artery - 2,04 \times 10⁻⁸ \pm 0,51 \times 10⁻⁸, p <0.05. Investigations of the chemokine's spasmolytic activity have shown that the new compound exhibits dilatatory properties. Chinocarb showed a minimum dilatatory activity at a concentration of 10⁻¹⁰ mol/L (0.05 \pm 0.001 mN) with a maximum at 10⁻² mol/L (0.11 \pm 0.0006 mN). The concentration, which represents half the maximum effect on the isolated rings of the thoracic segment of the aorta and renal artery of rats, was 7.29 \times 10⁻⁸ \pm 1.23 \times 10⁻⁸ mol/L, p <0.05 and 6.81 \times 10⁻⁸ \pm 1.19 \times 10⁻⁸, p <0.05, respectively.

Conclusions. The substance of chinocarb has a sufficient antispasmodic effect compared with classical spasmolytic drug drotaverin.