SUCCINIC ACID APPLICATION IN THE TREATMENT OF HYPOXIC CONDITIONS IN OBSTETRICS

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Due to a wide range of pharmacological activity, succinic acid has drawnthe attention of scientists in medicine and pharmacy. It has antihypoxic, antioxidant, neurotropic, antitoxic, cytoprotective, stressprotective, nootropic and actoprotective properties. Succinic acid stimulates the synthesis of protein, hemoglobin, porphyrins, promotes glucose uptake and glycogen synthesis in the liver, increases microcirculation in organs and tissues. The effect of the drugs, which include succinic acid, is realized by increasing the efficiency of energy substrates use and activation of recovery processes.A wide range of succinic acid effects allows it to be used in various combined preparations. The only parenteral dosage form is known, which includes succinic acid – the drug for detoxification "Reamberin" (Юрия-Фарм, Ukraine). Succinic acid is also part of the medicine «Limontar» (БИОТИКИ МНПК ООО, Russia) with high alkoprotective properties. Succinic acid as an antihypoxic and antioxidant agent is included in the eye drops composition for the cataracttreatment «Oftan®-Catachrom» (Santen, Finland). In addition, a wide range of pharmacological effects of succinic acid is realized in nutritional supplements.

In the pathogenesis of many diseases, one of the leading roles belongs to the activation of the processes of free radical oxidation with the subsequent imbalance of cellular metabolism. Hypoxic conditions and associated metabolic disorders also accompany a number of pathologies in obstetricssuch as placental dysfunction, preeclampsia, and pregnancy miscarriage. Considering that one of the areas of treatment and prevention of fetoplacental complex hypoxia is the application of antihypoxants, the study of succinic acid effect on the processes of lipid peroxidation with pregnancy pathologies is an important and topical issue.

At the Pharmacology Department of the National University of Pharmacy (Kharkiv, Ukraine), the study of the succinic acid effectson the model of placental insufficiency in rats caused by carbon tetrachloride has been carried out. Carbon tetrachloride oily solution was administered intragastrically at the dose of 0.4 ml per 100 g rat's weight in accordance with the method of Yu.I. Gubsky and V.S. Pozdnyakov in our modification. Animals were divided into 3 groups of (each group included 6 animals). The first group included intact animals, the second group was a control pathology group, whose animals received carbon tetrachloride oily solution from the 11^{th} to the 14^{th} day of pregnancy. The third group was administered carbon tetrachloride oily solution and succinic acid at the dose of 7.5 mg / kg. On the 20^{th} day of pregnancy animals under anesthesia performed an autopsy.

To study the effect of succinic acid, we researched the processes of lipid peroxidation in the uterus, placenta, liver and blood serum [1; 2]. It has been established that succinic acid inhibits the processes of lipid peroxidation in blood serum, uterus, liver, and placenta of rats.

References

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MECHANISMS OF AGE-RELATED LIPOFUSCIN ACCUMULATION

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In the process of life and metabolism, body cells constantly produce waste. Most of them are removed from the body with exhaled air, urine, feces and sweat. In