

TO THE ISSUE OF PARENTERAL NUTRITION EMULSION COMPOSITION DEVELOPMENT

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Introduction. One of the tasks of infusion therapy is to ensure the body's need for energy materials. In some pathological conditions, there is a need for parenteral nutrition - intravenous administration of drugs containing a balanced mixture of amino acids, glucose, fat emulsion for the prevention of protein deficiency and provision of energy needs of the body. The analysis of the assortment of preparations for parenteral nutrition has shown that amino acid solutions and fat emulsion to Ukraine are supplied by foreign companies.

Aim. To conduct research on the development of the composition of domestic fat emulsion for parenteral application.

Materials and methods. This group of infusion drugs is designed to introduce into the body fats, which are a source of energy and a supplier of higher unsaturated fatty acids, involved in the construction of cell membranes. For the creation of finely dispersed stable emulsions, as the oil phase used fractionated and highly purified vegetable oils - soybean, cottonseed, sunflower, coconut, olive, corn; fish oil; As an emulsifier used egg lecithin (i.e. phospholipids of egg yolk). The dispersion media of fatty emulsions were solutions of glycerin and sorbitol, which ensure the osmolarity of the preparation. As antioxidants, preventing the oxidation of fats during storage, tocopherol and methionine were used.

Model samples of emulsions of various compositions were prepared by mechanical dispersion using a high-frequency electromagnetic stirrer. Emulsion studies were carried out according to SPU requirements.

Results and discussion. Samples of fat emulsions for infusions containing 10% and 20% of specially purified vegetable oil, 1,2% of egg phospholipids, carbohydrate additive for osmolarity, antioxidants and purified water for injections were obtained using the mechanical dispersion method. The diameter of the microparticles of the oil phase in the emulsions, measured by means of an immersion microscope, was 0.8-1 μm .

Thermostability, frost resistance, pH value of emulsion samples were monitored. At present, the stability of emulsions is checked by centrifugation.

Conclusions. Since Ukraine does not produce fat emulsion for parenteral nutrition, research in the development of the formulations and technologies of these pharmaceuticals is extremely important and necessary.