

Zhumataykyzy S.

SUBSTANTIATION OF THE MEDICINE FORM OF EMULSION AND THE MECHANISM OF THEIR HYPOLIPIDEMIC ACTION, EMULATIVE AND ADSORPTION ABILITY OF COMPONENTS

Scientific supervisor Cand. of Chemical Sciences, Senior lecturer Shekeyeva K. K.

*The department of Chemical and Pharmaceutical Disciplines
JSC "National Medical University", Almaty city*

Introduction. Atherosclerosis is the basis of many cardiovascular diseases. As you know, reducing 1% of cholesterol with low density reduces the risk of death from IHD by 2%. Currently, the use of natural preparations based on garlic, with normal lipid-lowering action and characterized by good endurance, the lower cost of side effects is important.

Aim: the use of omega-3 of polyunsaturated fatty acids as an alternative to a wide range of drugs used for the treatment of the garlic hyperlipidemia and dangerous atherosclerosis by one of the representatives of polyunsaturated fatty acids.

Materials and methods: Along with sulfur organic substances, the garlic contains the proteins, carbohydrates, essential oils, macronutrients and trace elements, vitamins, phytosterols, phytoncides, saponins, glycosides, prostaglandins, organic acids, nitrogenous substances. For the preparation of the emulsion used vegetable oils, known under the lipid-lowering effect. Foods rich in dietary fiber (pectins, chitosan and alginates) were later added as a stabilizer to the resulting emulsion (oil + garlic). The internal phase of the nutrient emulsion consists of essential oils, consists of external water. The choice of emulsion as a dosage form for a drug depends on its emulsification ability.

Results and discussion: The sorption capacity of chitosan showed that it exceeds alginates and slightly less pectins. After 2 minutes of incubation, soluble polysaccharides depend on 55% to 78.1% of ions of absorbed metals, after 6 minutes - from 77.7% to 96%, after 25 minutes - from 88.5% to 99%, and after 40 minutes all study drugs depend on 100% of the maximum possible number of ions of absorbed metals. The rate of combination of metals with insoluble polysaccharides was low. The maximum possible number of metal ions impregnated after 5 minutes was associated with 43.8% to 72.5%. The maximum connection was established after 130 minutes of incubation. Most of the studied non-starch polysaccharides showed sorption activity in the range of pH from 4.0 to 8.0. The sorption capacity decreases sharply with a clear movement of the pH in the direction of alkali. Changes in the sorption capacity of chitosan and carrageen in different pH values differed from other polysaccharides. At acid pH values (up to 5.0), the binding ability of these two polysaccharides was close to zero. When the PH value is higher than 5.0, it sharply increased and reached its maximum at pH 7.5-8.0, after which it sharply decreased at pH 10.0. The magnitude of such a change in pH is 5.0 the dissociation constants of these compounds. The study used buffer solutions that do not react with the ligand centers of non-starch polysaccharides. The study of the conditions of sorption reactions showed that the acidity of the medium with respect to various divalent metals is unclear, the effect of non-starched polysaccharides on the binding activity.

Conclusions: The results of the work performed have shown that the main representatives of neo-starch polysaccharides exhibit pharmacological activity in various pathological conditions. It was observed that the severity of the pharmacological properties of non-starched polysaccharides directly depends on their sorption activity in relation to certain toxic compounds.