THE RELEVANCE OF DRUG DEVELOPEMENT OF SUSTAINED RELEASE CAPSULES WITH SIMVASTATIN

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Introduction. Simvastatin is used to control hypercholesterolemia. Simvastatin is derived from a synthetic modification of a fermentation product of Aspergillus terreus. Simvastatin contain a lactone ring within their structure. Simvastatin is a prodrug that is administered in its inactive lactone form and converted in the body to an active beta-hydroxy acid metabolite. The mechanism of action for simvastatin is competitive, reversible inhibition of HMG CoA reductase, the rate-limiting enzyme in cholesterol synthesis. Simvastatin is administered orally for the treatment of two hypercholesterolemia. Doses of simvastatin used to treat hypercholesterolemia are 5, 10, 20, and 40 or 80 mg/day. Initial effects occur within 1–2 weeks, with the maximal effect noted within 4–6 weeks. The major adverse effects associated with simvastatin, as well as with other statins, are an increased risk of myalgia and rhabdomyolysis. The relevance of development of sustained release capsules with simvastatin was formulated and the research work was supervised by Associate Professor Sichkar A.A. (Industrial Phamacy department).

Aim. The relevance of drugs development of sustained release capsules filled with simvastatin pellets. Simvastatin capsules are to use together with a proper diet to treat high cholesterol and triglyceride (fat) levels in the blood. This medicine may help prevent medical problems such as heart attacks, strokes caused by clogged vessels and to reduce the amount of cholesterol in the blood by blocking an enzyme that is needed to make cholesterol.

Materials and methods. It was used comparative, systematic, and logical analysis of data generalization in this work.

Results and discussion. There are several classes of antihyperlipidemic agents. They may differ in both their adverse effects and impact on the cholesterol profile. The prevalence of hypercholesterolemia and other forms of dyslipidemia and the risks associated with atherosclerosis and coronary heart disease determine the relevance of the search and creation of new oral lipid-lowering drugs. Nevertheless, for a majorety of drugs, there are significant limitations in the use, because of the risk of side effects. Sustained drug delivery technology is a practically promising way to enhance the therapeutic efficacy of drugs.

Conclusions. The results of data generalization and frequency of mentioned diseases present of the necessity of the new medicines development using simvastatin with lesser side effects.