

This work deals with formulation of biodegradable injectable reotropic matrices with folic acid. The survey presents the most important currently relevant items of polyesters from hydroxyacids as well as use of folic acid in modern medicine, properties, stability and degradation of biodegradable carriers, formulation of drug forms and preparations with accent to implantable systems. For the formulation of potential therapeutic formulations there were used biodegradable oligoester and polyester carriers in different stages of branching synthesized on the academic department (Department of Pharmaceutical Technology, Faculty of Pharmacy, Charles University in Hradec Králové). The studied systems were composed of a carrier, folic acid and additives serving for plastification or cross-linking of the systems. The subject of this study includes rheologic properties of the prepared matrices, their swelling, erosion and behavior, and the total scope of liberation of folic acid from the matrices. Plasticized systems behave mostly as Newtonian fluids, except systems with tributyl citrate which have a markedly pseudoplastic flow and systems with lactates which have weak tendency to a dilatant flow. Mixtures of plasticizers have an additive effect on viscosity. A plasticizer effects erosion in a wide range. Especially lactides solubilize specific fractions of an oligoester carrier. Change in the medium pH value from 6.0 to 7.0 has little effect on the erosion of the system, this effect is not explicitly construable for all systems. The size of an eroding solid has effect on the action particularly in the initial phase. What effects the behaviour and range of swelling is the swelling solid size. A plasticizer increases the range of swelling especially in the initial phase. A change in relevant acidity of the medium from 6.0 to 7.0 has, unlike erosion, a very important effect on swelling of the carrier. Although the effect of this factor was not evident, in most cases a higher range of swelling was achieved at pH 7.0 as a result of ionization of terminal carboxyl groups. Liberation from injectable implantable matrices is influenced by our choice of a plasticizer and its concentration. Mixture of butyl lactate with the same amount of triethyl citrate used in 30 % concentration led to formulation of matrices where the speed of drug liberation was too high. Polyethylenimines added to the carrier caused cross-linking by connection of terminal carboxyl groups and led to prolongation of folic acid liberation. On the basis of these results it can be enunciated that no relations of conspicuous character which would link viscosity of carriers, their swelling, erosion and liberation of folic acid have been found .