Pharmaceutical and cosmetic use of hyaluronic acid preparations

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Abstract

Hyaluronic acid is a biocompatible, biodegradable, and non-immune glucosaminoglycan, that is found throughout the body in various tissues and fluids and binds to specific cell surface receptors. In recent years, hyaluronic acid and its derivatives have been widely used in various drug delivery systems such as nanoparticles, according to the fact that it binds to the expressed CD44 receptors in certain types of tumors. Due to the numerous advantages, hyaluronic acid presents a challenge for the formulation of innovative preparations and their application for cosmetic and medical purposes.

 In order to achieve the set goals, we used published data from primary, secondary and tertiary literature, and we conducted research in order to determine the information about the use of hyaluronic acid preparations and the occurrence of adverse effects using survey of 60 volunteers. The obtained results showed that hyaluronic acid is optimal substance for medical purposes, providing higher therapeutic concentration of cytostatic in tumor tissues achieved by surface modification of nanoparticles, better flexibility of joints and reduction of postoperative complications in cataracts by use in gel form. According to the results from survey questionnaire, although 84% of the respondents use hyaluronic acid, the price is a major limiting factor for use in cosmetic purposes. In addition to the price, insufficient knowledge of the respondents about the advantages of this active substance, also limits the use of patented preparations. Therefore, this requires the need for additional education by health professionals for the medical application of hyaluronic acid.

Keywords: hyaluronic acid, nanoparticles, cosmetics, biodegradable