

THE INFLUENCE OF POLAR AND NON-POLAR EMOLLIENTS ON THE STRUCTURE AND SKIN MOISTURIZING POTENTIAL OF THE EMULSIONS STABILIZED BY MIXED EMULSIFIER

Dragana Stojiljković¹, Ivana Arsić², Marija Tasić-Kostov²

Farmakop Public Pharmacy, Niš, Serbia¹

University of Niš, Faculty of Medicine, Department of Pharmacy, Niš, Serbia²

Contact: Dragana Stojiljković

Duška Taskovića 18, Niš, Serbia

e-mail: s.dragana83@yahoo.com

The appropriate moisture content in the stratum corneum, as a superficial layer of the epidermis, provides softness and flexibility of the skin in different environmental conditions, and maintaining of skin humidity is very important in dermatology and dermocosmetology. In this paper, we investigated the skin moisturizing potential after a single application and structure of the emulsion of o/w type, stabilized by mixed emulsifier glycerylmonostearate self-emulsifying (GMSse), which contained polar emollients (PEG-7 glycerylcoate and myristyl myristate) and non-polar emollient (liquid paraffin), in a concentration of 10% (emulsions E1-E3, respectively). The emulsion structure was investigated by polarization microscopy, and the presence of different anisotropic structure was observed. The moisturizing potential after a single application and skin pH were investigated by skin bioengineering. Emulsions with polar emollients (E1 and E2) showed a statistically significant increase in skin moisture content after 30 minutes; 300 min after applications it did not exist; emulsion with a non-polar emollient (E3) showed significant moisturizing potential after 30 min and after 300 min probably as a consequence of occlusion. Nature and polarity of emollients affected the structure and properties of emulsions stabilized by anisotropic structures, and also the moisturizing level and pH of the skin immediately after their application. *Acta Medica Medianae 2016;55(2):25-30.*

Key words: emulsion o/w type, emollients, mixed emulsifier, liquid-crystalline phase, skin bioengineering