EVALUATION OF OFLOXACIN PENETRATION INTO THE SKIN AFTER A SINGLE ORAL DOSE ASSESSED BY CUTANEOUS MICRODIALYSIS

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An antibacterial drug can exert its therapeutic action if it is present in target tissue at proper concentration. Cutaneous microdialysis is a relatively new technique, which allows to determine drug concentration in the skin. The aim of the study was to evaluate the ofloxacin concentrations in plasma and skin following a single oral dose of 0.4 g. Drug concentration in the skin was assessed by applying cutaneous microdialysis. The penetration of the studied agent into dermal microdialysate was compared with its penetration into theoretical peripheral compartment.

Maximum ofloxacin concentration in plasma was 9.26 μmol/l on average and was achieved after about 1.7 h. Mean peak concentrations in cutaneous microdialysate and in theoretical peripheral compartment were comparable (4.16 versus 4.50 μmol/l), but time to peak concentration in theoretical peripheral compartment was significantly longer than in microdialysates (5.8 and 2.0 h, respectively). Degree of penetration into cutaneous microdialysate was about 0.54. Cutaneous microdialysis seems to be a valuable technique to evaluate drug penetration into the skin.

Key words: ofloxacin, skin penetration, cutaneous microdialysis, plasma concentration

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