



Comparative Study on the Pharmacokinetics of Rutin and Quercetin in Diabetic and Normal Rats by HPLC-DAD

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SUMMARY. Diabetes mellitus (DM) is a serious health problem affecting millions of individuals worldwide. It is showed that some changes of many enzymes and transporters concerned with metabolism and disposal of drug have taken place in organism under pathologic state of DM. The pharmacokinetic of drug should be different between diabetic and normal animals. Rutin and quercetin can also be used to treatment of diabetic mellitus. So, this paper investigated the difference of pharmacokinetic profiles of rutin and quercetin in diabetic and normal rats in vivo by HPLC-DAD method. The pharmacokinetic parameters were analyzed by double-compartmental method (DAS2.0). The pharmacokinetic parameters of rutin in normal and diabetic rats were: (22.203 ± 2.6) and (36.174 ± 7.5) mg · h/L for $AUC_{(0-4)}$; (0.726 ± 0.13) and (1.069 ± 0.17) h for $MRT_{(0-4)}$, (5.413 ± 0.57) and (6.595 ± 0.38) h for $t_{1/2}$; (0.424 ± 0.071) and (0.226 ± 0.072) L/h/kg for Cl, respectively. The pharmacokinetic parameters of quercetin in normal and diabetic rats were: (5.243 ± 0.82) and (2.376 ± 0.61) mg h/L for $AUC_{(0-4)}$; (2.556 ± 0.52) and (1.616 ± 0.35) h for $MRT_{(0-4)}$, (1.216 ± 0.17) and (0.992 ± 0.12) h for $t_{1/2}$; (1.918 ± 0.32) and (4.342 ± 0.99) L/h/kg for Cl, respectively. Those results indicate that the pharmacokinetic profiles of rutin and quercetin were changed by DM.

KEY WORDS: Diabetes mellitus, High performance liquid chromatography, Pharmacokinetic, Rutin, Quercetin.

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