DOI : 10.5958/2277-8934.2019.00042.0 *Vol 26 No 3, p 261-265*

EFFECT OF ITRACONAZOLE ON THE PHARMACOKINETICS OF MIDAZOLAM IN BACTRIAN CAMELS

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ABSTRACT

The objective of this study was to investigate the effect of the CYP3A enzyme specific inhibitor Itraconazole on the pharmacokinetics of midazolam in Bactrian camels. The camels were allocated randomly into 2 groups of 5 animal each. Camels in group 1 were given a single dose of midazolam only, and camels in group 2 were administered 4 consecutive days of Itraconazole and a single dose of Midazolam. Blood samples were collected from the jugular vein at different times. Midazolam concentration in plasma was determined by high-performance liquid chromatography-ultraviolet detection. The pharmacokinetic parameters of Midazolam were analysed by Phoenix WinNonLin v7.0. There were no significant differences in the clearance or mean residence time of midazolam between the two groups. However, substantial differences were observed in $T_{½}$, T_{max}, C_{max}, AUC_{0-t} and V_d between them. $T_{½}$, C_{max} and AUC_{0-t} in group 2 were higher than that in group 1, whereas T_{max} and V_d in group 2 were significantly lower than that in group 1. Therefore, midazolam was metabolised mainly by CYP3A in Bactrian camels, and Itraconazole, a specific inhibitor of CYP3A enzyme, could inhibit CYP3A activity significantly and affect the pharmacokinetics of midazolam in Bactrian camels.

Key words: Bactrian camel, CYP3A enzyme, itraconazole, midazolam, pharmacokinetics