구연 6

Bioavailability, Pharmacokinetics and Safety of Intravenous Pazufloxacin in Healthy Korean Volunteers

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Background/Aims: Pazufloxacin mesilate, a newly developed fluoroquinolone for intravenous administration, shows broad spectrum, potent antibacterial activity. The aim of this study was to evaluate the bioavailability, pharmacokinetics and safety of intravenous pazufloxacin in healthy Korean volunteers.

Methods: This was a single-center, randomized, open-label, parallel-group dose response trial. 40 healthy male subjects were randomized to receive pazufloxacin mesilate 300mg, 500mg, 600mg, or 1000mg via 1-hour intravenous infusion. Blood samples for pharmacokinetic analysis were collected up to 24 hours. Safety was also assessed, including adverse events, hematology, biochemistry, coagulation profiles, electrocardiography, and urinalysis. Plasma concentrations of pazufloxacin were analyzed using high-performance liquid chromatography. Pharmacokinetic characteristics were compared according to a non-compartmental analysis using WinNonLin. Linear regression analysis was performed to test concentration-time data for dose proportionality

Results: AUC0-24 (mean +/- SD) of pazufloxacin mesilate 300, 500, 600, and 1000mg were 13.75 +/- 1.81, 24.82 +/- 4.47, 33.25 +/- 5.65, and 58.60 +/- 12.37 mg*hr/L, respectively; Clearance (CL/F) were 0.31 +/- 0.05, 0.30 +/- 0.04, 0.25 +/- 0.03, and 0.28 +/- 0.03 L/hour*kg-1. Also, half life values (t1/2) of pazufloxacin 300, 500, 600, 1000mg were 2.99 +/- 0.50, 2.97 +/- 0.24, 2.90 +/- 0.11 and 2.70 +/- 0.10 hours, respectively. AUC0-24 values increased in a dose-proportional linear fashion (R=0.92; $p < 0.001$). Pazufloxacin was safe and well-tolerated, and did not show any serious adverse events in all subjects.

Conclusiion: Pazufloxacin mesilate was found to have good dose linearity for AUC0-24 and was a safe drug in healthy Korean volunteers. ACKNOWLEDGMENT: This study was supported by a grant of the Korea Health 21 R&D Project, Ministry of Health & Welfare, Republic of Korea (A050584) and by the Brain Korea 21 Project in 2007.