Wagenlehner, Florian M.E.; Wagenlehner, Christine M.; Blenk, Birgit; Blenk, Holger; Schubert, Sabine; Dalhoff, Axel; Naber, Kurt G.

Urinary Pharmacokinetics and Bactericidal Activity of Finafloxacin (200 and 800 mg) in Healthy Volunteers Receiving a Single Oral Dose

Abstract: Background: Finafloxacin is a novel 8-cyano-fluoroquinolone under investigation for treatment of urinary tract infection. Methods: Urinary concentrations and urinary bactericidal titers (UBT) of finafloxacin 200- and 800-mg single doses in 6 healthy volunteers were measured up to 48 h. UBT were determined for a reference strain and 9 selected clinical uropathogens at the pH of native, acidified (pH 5.5) and alkalinized (pH 8.0) urine.

Results: The mean maximum urine concentrations for 200 and 800 mg finafloxacin were 69.3 mg/l (0–2 h) and 150 mg/l (4–8 h). Median UBT were between 0 and 1>:2,048 and were in general agreement with minimal inhibitory concentrations of strains and urinary pH values. UBT in alkaline urine were significantly lower than those in native or acidic urine, except for Enterococcus faecalis.

Conclusions: Finafloxacin exhibited significant bactericidal activity against susceptible uropathogens. The urinary bactericidal activity of finafloxacin was enhanced in acidic urine and significantly lower in alkaline urine.

Stichworte: Finafloxacin; Urine pharmacokinetics; Pharmacodynamics; Urinary bactericidal titers

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