Pharmacokinetics of Terazosin after a Single Oral Dose in a Mixed-Race Local Stray Dogs

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Abstract:

Background: Terazosin is analpha-1-selective adrenergic antagonist which belongs to quinazolines and chemically it is similar to prazosin. Continuous search for novel agents to reduce symptoms or treat benign prostatic hyperplasia with less side effects and improve current treatments are of considerable interest.

Objective: The aim of this study was to describe the pharmacokinetics of terazosin after a single oral dose in a mixed-race local stray dogs. Pharmacokinetics of terazosin were not previously assessed in mix-race local stray dogs.

Methods: Male mixed-race local stray dogs (n = 5) 1 – 1.5 years and weighing 8-12 kg were used in this study. Each dog received two tablets of terazosin (10 mg each, a total of 20 mg) administered as terazosin hydrochloride. Blood samples (about 5 mL) were collected at 5 min before administration, 0 min, 5 min, 15 min, 30 min, 45 min, 1 h, 2 h, 3 h, 4 h, 6 h, and 24 h after administration from each dog. Blood samples were allowed to stand and serum was obtained after centrifugation. Serum samples were stored at - 20 º C until the time of analysis. A non-compartmental analysis was performed to estimate the pharmacokinetic parameters of terazosin.

Results: The maximal drug concentration (C_{max}) following the 20 mg single oral dose was 1.15 µg/mL and was reached (T_{max}) 0.75 h after the drug was administrated. The half-life ($t_{1/2}$) of elimination in this study was 12.6 h. Exposure of dogs to terazosin as represented by the area under the time- concentration curve ($AUC_{0\text{-}inf}$) was 10.66 µg/mL*h.

Conclusion: The pharmacokinetic parameters of terazosin after a single oral dose of 20 mg is now more clearly defined in mixed-race local stray dogs. This should facilitate future use of such model in assessing either pharmacokinetics or pharmacodynamics properties of different formulations containing terazosin.