Introduction Ketorolac is a racemic drug with analgesic effects specific to its S-enantiomer. This study aimed to describe enantiomer-specific maturational pharmacokinetics (PK). Simulations were performed to describe how S-ketorolac exposure in infants differs from adults, and how this affects the adult racemic analgesic trough threshold EC50 (EC50thr-adult) 0.37 mg/L in infants (EC50thr-infant) when the same S-target is applied.

Methods A population PK analysis (NONMEM 7.3) was performed based on 1020 plasma samples from 5 studies including 80 patients (adults, children, infants) following single intravenous ketorolac administration.

Results S-ketorolac PK was best described with a 2-compartment model in infants and 3-compartment model in adults, while R-ketorolac PK was best described with a 2-compartment model in all. S-ketorolac clearance [mean population value: 3.45 L/h/56 kg] and central volume of distribution (V1) [4.27 L/56kg] increased exponentially with bodyweight. Simulations revealed EC50thr-adult (0.37 mg/L) contained 0.048 mg/L S-ketorolac as mean in typical adults (BW 48.6–99.6 kg), while EC50thr-adult contained 0.303–0.306 mg/L S-ketorolac in typical infants (BW 5.3–10.6 kg). To reach adult S-enantiomer concentration (0.048 mg/L) in typical infants (BW 5.3–10.6 kg), EC50thr-infant should be 0.49–0.46 mg/L, respectively.

Conclusion Enantiomer-specific maturational PK of ketorolac were described. Subsequent simulations displayed differences in proportion of S- and R-ketorolac on the racemic threshold EC10. A The same S-ketorolac concentration necessitates a higher EC50thr-infant to EC50thr-adult.

Disclosure(s) Nothing to disclose

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PHARMACOKINETICS OF A CONTINUOUS INFUSION OF PIPERACILLIN/TAZOBACTAM TO CHILDREN USING AN ELASTOMERIC PUMP (POPPET STUDY): PILOT DATA FROM DOUBLE LUMEN CENTRAL LINES


Background Piperacillin/Tazobactam is the first-line antibiotic for the treatment of febrile neutropenia in the UK. There is