



The aim of this study was to review age- and weight-related effects on ketorolac pharmacokinetic parameters in children and current dosing schedules” McLay et al (2017).

Abstract:

BACKGROUND: Intravenous ketorolac is commonly administered to children for the control of postoperative pain. An effect site EC₅₀ for analgesia of 0.37 mg. L⁻¹ is described in adults.

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AIMS: The aim of this study was to review age- and weight-related effects on ketorolac pharmacokinetic parameters in children and current dosing schedules.

METHODS: Pooled intravenous ketorolac (0.5 mg. kg⁻¹) concentration-time data in children aged 2 months to 16 years were analyzed using nonlinear mixed-effects models. Allometry was used to scale to a 70 kg person.

RESULTS: There were 64 children aged 2 months to 16 years (641 plasma concentrations) available for analysis. A two-compartment mammillary model was used to describe pharmacokinetics. Clearance was 2.53 (CV 45.9%) L. h⁻¹. 70 kg⁻¹ and intercompartment

clearance was 4.43 (CV 95.6%) L. h⁻¹. 70 kg⁻¹ . Both central (V1) and peripheral (V2) volumes of distribution decreased with age over the first few years of postnatal life to reach V1 6.89 (CV 30.3%) L. 70 kg⁻¹ and V2 5.53 (CV 47.6%) L. 70 kg⁻¹ .

CONCLUSION: Clearance, expressed as L. h⁻¹. kg⁻¹ , decreased with age from infancy. A dosing regimen of 0.5 mg. kg⁻¹ every 6 hours maintains a trough concentration larger than 0.37 mg. L⁻¹ in children 9 months to 16 years of age. This dosing regimen is consistent with current recommendations.

Reference:

McLay, J.S., Engelhardt, T., Mohammed, B.S., Cameron, G., Cohen, M.N., Galinkin, J.L., Christians, U., Avram, M.J., Henthorn, T.K., Dsida, R.M. and Anderson, B.J. (2017) The pharmacokinetics of intravenous ketorolac in children aged 2 months to 16 years: A population analysis. *Paediatric Anaesthesia*. December 21st. .

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