

INFLUENCE OF PATIENT-RELATED FACTORS ON FENTANYL PHARMACOKINETICS IN CHILDREN

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Fentanyl is commonly used in a hospital setting for achieving sedation and analgesia in children. The aim of this review was to clarify the pharmacokinetic aspects of the intravenous fentanyl use in children.

In general, drug pharmacokinetics is altered in children at all levels, but there is a significant variability between children of different age, as well. After intravenous drug administration, the difficulties related to oral route and gastrointestinal absorption are avoided. Changes in drug distribution, metabolism and elimination are due to differences in the volume of extracellular and total body water compartments, organ perfusion, acid-base balance, membrane permeability and cardiac, liver and kidney function. Nevertheless, the greatest impact is attributed to the body size.

Children are the most vulnerable population. Therefore, it is of extreme importance to dose fentanyl safely, but efficiently as well. Common weight-based dosing strategy may not always be the optimal, due to numerous covariates of the fentanyl pharmacokinetics. In a certain clinical setting, beside hidden factors such as genetics, age and gestational age, obesity and potential drug interactions are the first to be taken into account. *Acta Medica Medianae* 2023;62(1):56-61.

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