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The impact of obesity on the pharmacokinetics of drugs in adolescents and adults

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The **impact** of **obesity** on the pharmacokinetics of drugs in **adolescents** and adults

Anne van Rongen

Despite the increasing number of obese patients, evidence-based dosing guidelines are scarce, particularly for obese children and morbidly obese adults (BMI > 40 kg/m²). For both these populations, pharmacokinetic studies are needed to provide a basis for evidence-based dosing guidelines.

In this thesis, we studied the pharmacokinetics of the CYP3A substrate midazolam, the renally excreted drug metformin and acetaminophen (metabolized by glucuronidation, sulphation and CYP2E1) in obese adolescents and/or morbidly obese adults. We address several currently unanswered questions; Can doses for obese adolescents be predicted on the basis of data obtained in morbidly obese adults? How to analyse pharmacokinetic data in obese adolescents, for whom body weight is influenced by growth, age and obesity? How to achieve safe and effective acetaminophen dosing for morbidly obese patients?

The studies described in this thesis contribute to the existing gaps in knowledge regarding the pharmacokinetics and evidence-based dosing of drugs in obese adolescents and morbidly obese adults.

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