

Pharmacokinetics of gentamicin in children with nephrotic syndrome

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The disposition of gentamicin was studied in five children with nephrotic syndrome and five control children to observe the effect of nephrotic syndrome on the distribution and elimination of the antibiotic. After a single intravenous dose of gentamicin (2.0 mg/kg body wt.) administered to each child, blood samples were drawn at frequent intervals during a 4-h period and then analyzed by homogenous enzyme immunoassay (EMIT). Time-concentrations drug profiles were characterized by means of a two-compartment open model. The mean half-life of gentamicin in nephrotic children (96.4 ± 16.8 min) was significantly longer than in the control group (62.5 ± 7.1 min). The distribution volume of the central compartment was similar in both groups studied, but the distribution volume at steady-state was increased in children with nephrotic syndrome. Total plasma clearance was found decreased in nephrotic (2.8 ± 0.5 ml/min/kg) in comparison with controls (3.7 ± 0.7 ml/min/kg). From our findings, it co