

# EFFICACY AND SAFETY OF THE CONTINUOUS INFUSION OF VANCOMYCIN IN PAEDIATRIC PATIENTS: A SYSTEMATIC REVIEW

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## Background and importance



In adults, continuous infusion of vancomycin (CIV) has been evaluated as an alternative to intermittent infusion (IIV) with potential advantages.

## Aim and objectives



To identify and assess the available evidence on the safety and efficacy of the CIV in pediatric patients

## Results



359 studies identified → 7 included

**Design:** 1 CT, 3 cases series studies, 3 retrospective, 1 prospective study.

**Population:** critical pediatric (n=34), cystic fibrosis (n=3), onco-haematological (n=94), and osteomyelitis and pneumonia (n=15) patients, various sub-populations (n=314).

**Efficacy:** 6/6 assessed attainment of plasma concentrations (0-100%) and 3/6 clinical efficacy

**Safety:** 2/6 studies observed cases of nephrotoxicity with 11% (n=10) and 12%(n=3) of the total population

## Material and methods



Databases: PubMed and EMBASE published before November 2020 was conducted, in accordance with the PRISMA Statement.

Search terms: “Vancomycin” AND “Pediatric OR Child OR Children OR Infant” AND “Continuous infusion”.

The inclusion criteria: clinical trials (CT) and observational studies that assessed the clinical efficacy and/or attainment of plasma concentrations of vancomycin (pharmacokinetic efficacy) in pediatric patients treated with CIV.

The exclusion criteria: adults and the neonatal population and studies in a language other than English or Spanish.

## Conclusion and relevance



The best administration method for this antibiotic within the pediatric population is still unknown due to limited evidence.

However, studies conducted thus far suggest pharmacokinetic advantages for CIV. Further investigation is required, in particular CTs comparing IIV with CIV for clinical efficacy and safety outcomes