

# INADEQUACY 24-HOUR AREA UNDER THE CURVE DURING THE INITIAL DAYS OF INTRAVENOUS VANCOMYCIN TREATMENT

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## BACKGROUND AND IMPORTANCE

The Infectious Diseases Society of America (IDSA) recommend early vancomycin monitoring, adjusting the dose to achieve an AUC<sub>24h</sub> of 400-600 mg·h/L, but the time needed to reach this target remains unclear.

## AIM AND OBJECTIVES

Evaluate AUC<sub>24h</sub> levels during the first three days of vancomycin treatment in patients managed according to routine clinical practice with pharmacokinetic monitoring.

## MATERIAL AND METHODS

- Prospective, observational, single-center study
- 30 patients treated with vancomycin IV
- Period: January-February 2025
- Individual pharmacokinetic parameters were estimated using Abbott's PKS Bayesian software
- Pharmacokinetic profiles were segmented by treatment day and digitally analyzed (Python pixel quantification) to determine actual AUC<sub>24h</sub> values during the first three days.

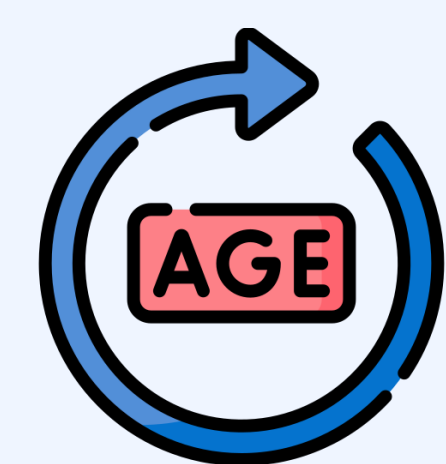


Data collected: weight, height, age, sex, serum creatinine and administered doses.

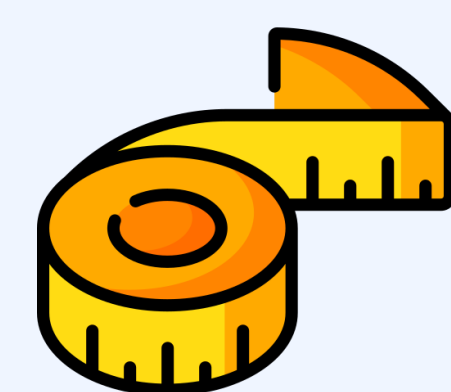
## RESULTS



30 PATIENS



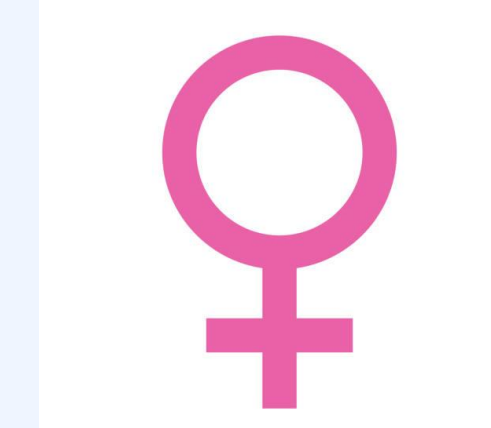
66 years  
(59-73)



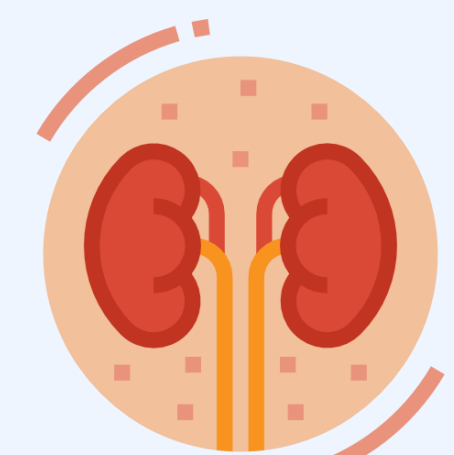
167 cm  
(164-170)



69 kg  
(64-74)



27%  
(14-45)



0.9 mg/dl  
(0.8-1)



20% (6-34)  
reached the target  
AUC<sub>24h</sub>

67% (50-84) underdosed

13% (1-25) overdosed

Mean AUC<sub>24h</sub>: 372 mg h/L  
(302-441)



70% (54-86)  
reached the target  
AUC<sub>24h</sub>

13% (1-25) underdosed

17% (3-30) overdosed

Mean AUC<sub>24h</sub>: 513 mg h/L  
(464-561)



64% (47-82)  
reached the target  
AUC<sub>24h</sub>

7% (0-17) underdosed

28% (12-45) overdosed

Mean AUC<sub>24h</sub>: 543 mg h/L  
(502-583)

## CONCLUSION AND RELEVANCE

**80%** of patients had **inadequate dosing** on **day one**, and **one-third** remained outside the therapeutic range **after 72 hours**. Highlights the need for **early optimization** through **loading doses**, **pharmacist validation**, and **timely monitoring**.

4CPS-090



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