STUDY OF THE IMPLEMENTATION OF A VANCOMYCIN PHARMACOKINETIC MONITORING PROGRAMME IN PAEDIATRICS

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BACKGROUND AND IMPORTANCE

-Efficacy and toxicity are strictly related with Vancomycin serum concentrations.
-Special care must be considered when treating paediatric patients with this antibiotic.

AIM AND OBJECTIVES

1.- Analysis of the compliance to the Vancomycin dosage protocol in paediatrics of a third level hospital.
2.- Evaluation of the impact of pharmacokinetic monitoring on the adequacy of therapeutic levels.

MATERIAL AND METHODS

Descriptive, observational and retrospective study

From the beginning of the implementation of the vancomycin monitoring programme (January 2017) until August 2020

It included all paediatric patients who have received recommendations for dosage adjustment after determination of vancomycin serum levels.

The adherence to the initial dosage to the protocol, the serum levels at the beginning of the monitoring programme and serum levels at the end of treatment were studied.

RESULTS

n=133
83 men (62.4%)
Mean age for patients less than 1 month old: 14.5±9.4 days
Mean age for patients older than 1 month: 4.4±4.2 years
68.1% of the neonatal patient population were premature at less than 40 weeks gestation.

Prescribing services:
Neonatal ICU (40.6%), Paediatric ICU (27.8%), Neonates (14.3%), Paediatrics Infectious Diseases (8.5%), Paediatrics (5.3%), and Paediatric Oncology (3.8%).

Diagnostics:
Suspected infection (37.2%), sepsis (25.6%), meningitis (10.9%), bacteremia (7.8%), pneumonia (4.7%), gastrointestinal infection (3.9%), urinary tract infection (1.6%), and other causes (8.5%).

Following pharmacokinetic recommendations, the values were within the range in 66.2% of cases.

Vancomycin levels were within the therapeutic range in 30.8% of cases at the start of monitoring.

The adherence to the protocol prior to monitoring was 81.2%.

CONCLUSIONS AND RELEVANCE

The variability in the paediatric patients of this study shows that, even though most prescriptions are in accordance with the protocol, only 30.8% achieve therapeutic levels. This percentage doubled after the monitoring programme, which highlights the great value of monitoring and personalised dose recommendations, especially recommended in this type of patient.