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IMPLEMENTATION OF A LINEZOLID PHARMACOKINETIC MONITORING PROGRAMME

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BACKGROUND

Linezolid is an antibiotic that presents high inter- and intra-individual variability and therefore may compromise its clinical efficacy or increase the risk of associated toxicity.

OBJECTIVES

To establish a program for monitoring linezolid plasma levels → Identify patients who can benefit most from its use → Evaluate its results in our centre

MATERIAL AND METHODS

A literature review was performed to define the criteria that allowed us to identify patients who were candidates for pharmacokinetic monitoring of linezolid.

We established the determination of plasma concentrations before the administration of the 5th dose and then periodically every 3-4 days until the end of treatment.

The efficacy and safety criterion was to maintain the trough plasma concentration (Cmin) in the therapeutic range (between 2 and 8 mg/L).

RESULTS

The criteria selected for the identification of patients who were candidates to be part of the monitoring program were:

- ★ Critical patients
- ★ Transplanted patients, severe burns or cystic fibrosis.
- ★ Obese patients (BMI > 30).
- ★ Kidney failure (creatinine clearance < 30 ml/min) and liver failure (Child Pugh C).
- ★ Renal replacement therapies.
- ★ Prolonged treatments (> 3 weeks).
- ★ Treatment with Glycoprotein-P inducers.

From January to April 2022 → **20 PATIENTS**

Median age: 69 years
Mean duration of treatment: 11,6 days

All patients started treatment in critical care units and the chosen route of administration was intravenous.

50 SAMPLES ANALYZED (mean Cmin=5.3 mg/L) → 30 samples out of therapeutic range → 30 modifications of the dosing regimen → 17 dose ↑ / 13 dose ↓

CONCLUSIONS

Incorporating this program into clinical practice allows us to proactively identify the patients who could benefit most from linezolid monitoring.

The results demonstrate the high variability of linezolid plasma levels and the usefulness of dosing recommendations issued by the Pharmacy service to ensure that the Cmin remains within the therapeutic range.

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