INTERINDIVIDUAL VARIABILITY OF LINEZOLID IN CRITICALLY ILL PATIENTS

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BACKGROUND AND IMPORTANCE:

A high variability in Linezolid plasma concentrations (Cp) has been observed when administered at the standard dosage recommended in the technical data sheet (600mg/12h), directly related to the effectiveness of the treatment and the appearance of hematological toxicity.

AIM AND OBJECTIVES:

To describe the Cp values of linezolid obtained in critically ill patients, as well as the recommendations made during pharmacokinetic monitoring.

MATERIAL AND METHODS:

Retrospective observational study carried out in a Hospital with patients>18 years old admitted to the critical care units between September 2019-May 2021, in which at least one Cp determination of linezolid was performed.

Demographic, clinical, therapeutic and pharmacokinetic monitoring-related variables were collected. Cp determination of linezolid was analyzed by homogeneous enzyme immunoassay (IndikoTM Plus kit).

Target therapeutic interval of linezolid
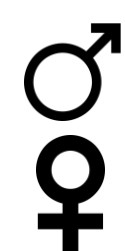
2-8 µg/mL

Stadistical analysis

R software

RESULTS:

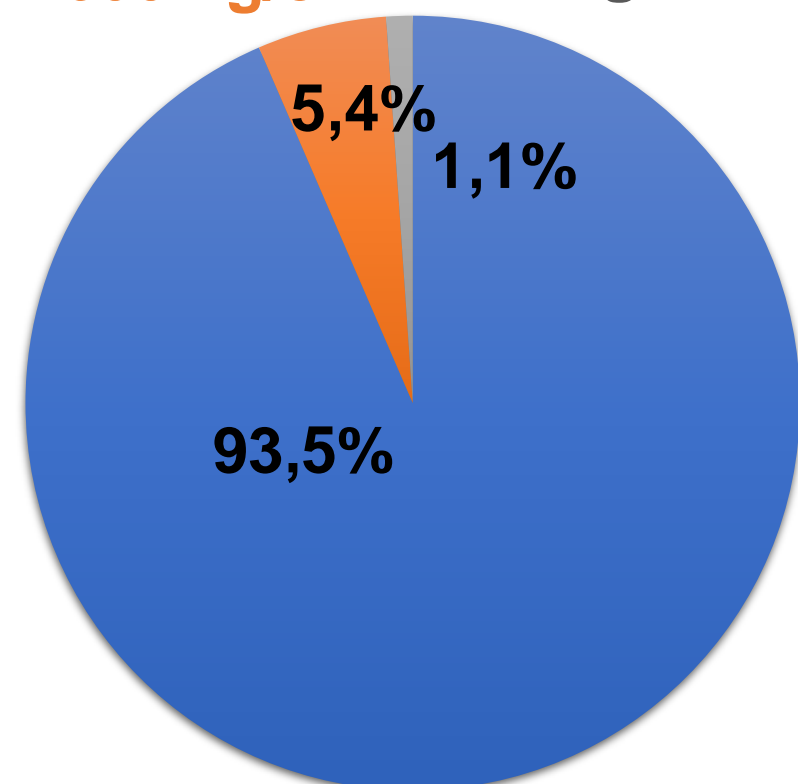**92 patients**
2.4 determinations per patient

♂ **67%** → 67 years, BMI of 30±7.74 kg/m²
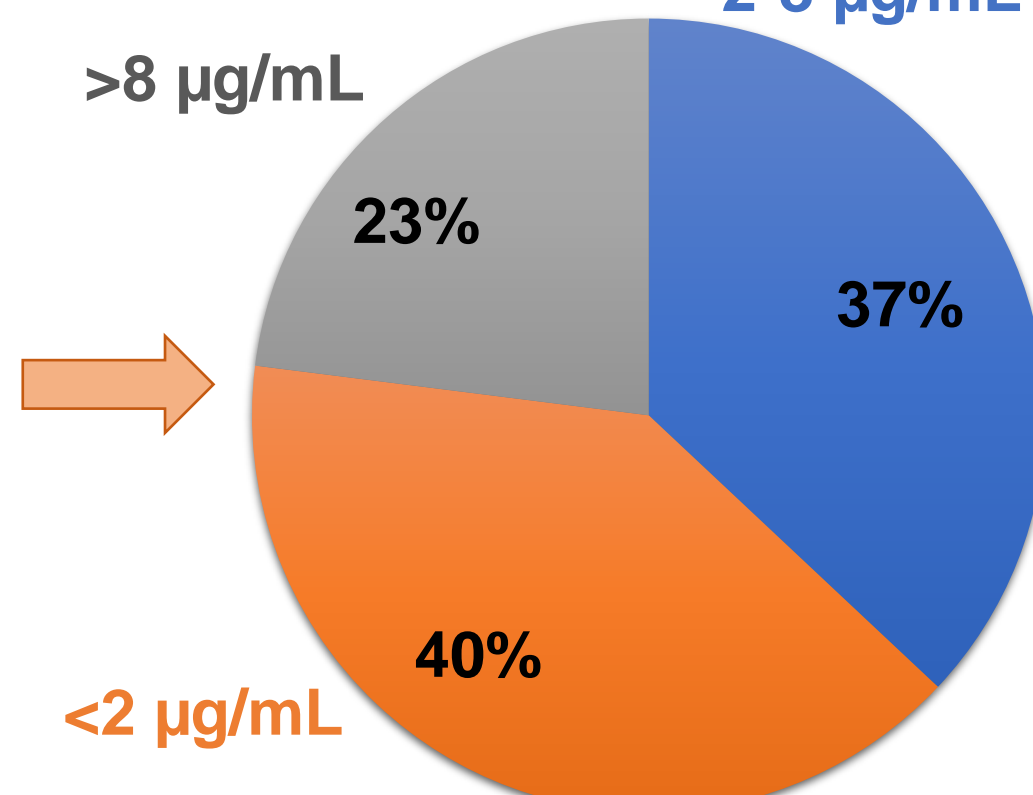♀ **33%** → 68 years, BMI of 30±6.98 kg/m²

Initial dosage of Linezolid:

600mg/8h   600mg/24h
5,4%   1,1%
93,5%
600mg/12h

1st determination:

>8 µg/mL   2-8 µg/mL
23%   37%
40%
<2 µg/mL

Modification of the dosage was recommended in 70%

✓ **Intermittent infusion:** 400-2400mg/day (6,8,12,24h)
✓ **Continuous infusion:** 1200-1800mg/day

2nd determination:

47% → 2-8 µg/mL

AFTER treatment with Linezolid:

Reduction in platelet:
✓ **>25%:** 46 patients (42%)
✓ **Thrombocytopenia (below 100x10³/µL):** 20 patients (22%)

CONCLUSION:

There is high variability in the Cp of linezolid obtained in the critically ill patients analyzed in our study, with a low percentage of patients being within the established optimal therapeutic interval. In 60% of the pharmacokinetic reports, a modification of linezolid dosage was recommended.

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