

POSTER PRESENTATION

Open Access

Impact of an inducement to give high doses of amikacin and gentamicin on serum concentrations in critically ill patients with severe sepsis

C Roger¹, B Louart^{1*}, L Muller¹, JA Roberts², JY Lefrant¹

From ESICM LIVES 2015

Berlin, Germany. 3-7 October 2015

Introduction

Low first-dose peak serum concentrations of amikacin and gentamicin are reported in intensive care unit (ICU) patients.¹

Objectives

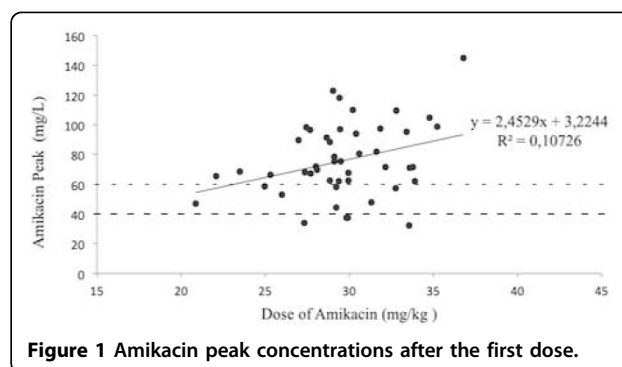
The present study aimed at assessing the impact of giving high doses of amikacin (30 mg/kg) or gentamicin (8 mg/kg) in ICU patients with severe sepsis.

Methods

Single-center observational study. All ICU patients with clinical indication of aminoglycosides were eligible. ICU physicians were encouraged to administer maximal recommended doses of amikacin and gentamicin (30 and 8 mg/kg, respectively). The first and subsequent doses and corresponding peak plasma concentrations were recorded. Guideline targets for serum concentrations were used with ≥ 60 and ≥ 30 mg/L for amikacin and gentamicin, respectively. A target pharmacokinetic/pharmacodynamic (PK/PD) ratio of 10-times the minimal inhibitory concentration (10xMIC) was also measured.

Results

Sixty-three ICU patients (39 males, 68 ± 16 years, 75 ± 22 kg, 168 ± 8 cm, SAPS II = 43 ± 16) with severe sepsis and an indication for IV amikacin (n = 47) or gentamicin (n = 16), were included. Pulmonary, abdominal and urinary tract infections were diagnosed in 56 patients. Infection was confirmed in 37 (59%) patients. The target first-dose



peak serum concentration was achieved in 37/63 patients (59%)(36/47 (77%) and 1/16 (6%) patient for amikacin and gentamicin, respectively). 59/63 (94%) patients achieved the PK/PD target using the MIC data that was available from 21 patients. However, the subsequent injection should be cancelled in nearly half of patients due to a too high trough, without renal function impairment.

Conclusions

30 mg/kg amikacin and 8 mg/kg gentamicin doses led to adequate peak serum concentrations in 59% patients using guideline targets.

Authors' details

¹Nimes University Hospital, Nimes, France. ²University of Queensland, Brisbane, Australia.

Published: 1 October 2015

¹Nimes University Hospital, Nimes, France
Full list of author information is available at the end of the article

Reference

1. de Montmollin E, Bouadma L, Gault N, Mourvillier B, Mariotte E, Chemam S, *et al.*: Predictors of insufficient amikacin peak concentration in critically ill patients receiving a 25 mg/kg total body weight regimen. *Intensive Care Med* 2014, **40**(7):998-1005.

doi:10.1186/2197-425X-3-S1-A402

Cite this article as: Roger *et al.*: Impact of an inducement to give high doses of amikacin and gentamicin on serum concentrations in critically ill patients with severe sepsis. *Intensive Care Medicine Experimental* 2015 **3**(Suppl 1):A402.

Submit your manuscript to a SpringerOpen[®] journal and benefit from:

- Convenient online submission
- Rigorous peer review
- Immediate publication on acceptance
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your next manuscript at ► springeropen.com
