



## Screening of KPC (*Klebsiella pneumoniae carbapenemase*) in a Pediatric Intensive Care Unit

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### Introduction

Bacterial antibiotic resistance is an emerging problem with major impact in terms of hospital "ecology" and quality in health care. Several mechanisms of bacterial resistance to antimicrobials, including enzyme-mediated hydrolysis, have been described. We highlight the production of KPC, first described in North Carolina in 2001, in *Klebsiella* species resistant to carbapenem therapy. This mechanism of resistance was also detected in other Enterobacteriaceae. The treatment of these infections became a challenge since there is a real risk of running out of antimicrobial treatment options. In Portugal several outbreaks have occurred recently in adults and the sanitary authorities have implemented a program for prevention and control of infections and resistance to antimicrobials (PPCIRA) that established criteria for the research of the microorganisms previously mentioned.

### Objectives

The objective of this study was to analyze the patients hospitalized in a Paediatric Intensive Care Unit who underwent KPC screening at admission.

### Methods

#### Retrospective and descriptive study

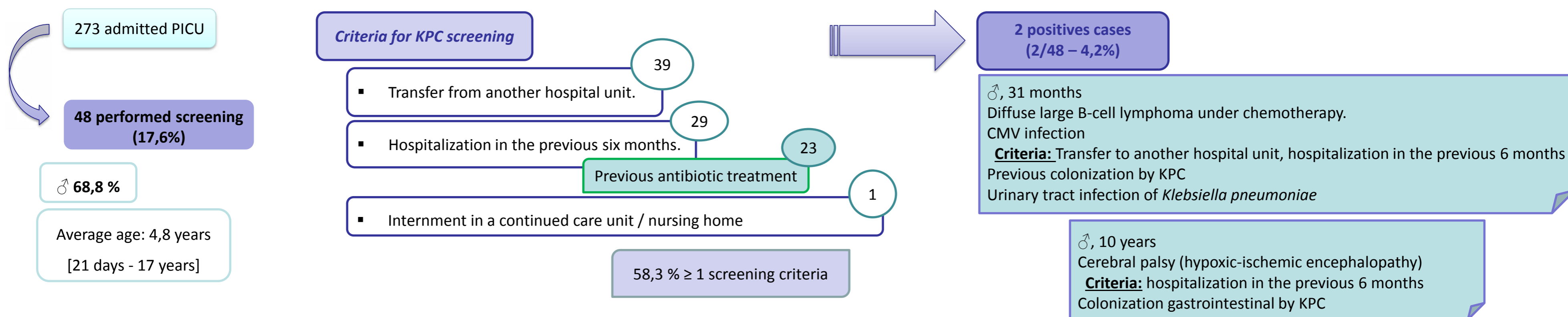
- February 2016 – August 2017
- Analysis of variables:
  - Age, sex, established criteria and microbiological outcome

#### Criteria established by PPCIRA for KPC screening (rectal swab):

1. Transfer from other hospital units
2. Previous stay in institutional care units / nursing homes
3. Hospital admission in the previous 6 months.

The KPC screening was done by molecular biology in GeneXpert – Xpert Carba-R

### Results



### Discussion

Identification of patients at risk of transmission of problem microorganisms is a basic principle of infection control, along with hand hygiene, use of personal protective equipment and cleaning. In this study we document the emergence of KPC-producing bacteria also in paediatric age, which reinforces the importance of systematic screening of the patients at risk at admission. Infection control measures prevents transmission of these agents to other patients and an adequate initial antibiotic choice for affected patients.