

This study aimed at evaluating the predictors and outcomes associated with multidrug-resistant gram-negative bacterial (MDR-GNB) infections in an oncology pediatric intensive care unit (PICU)" de Oliveira Costa et al (2015).

Reference:

de Oliveira Costa, P., Atta, E.H. and da Silva, A.R. (2015) Infection with multidrug-resistant gram-negative bacteria in a pediatric oncology intensive care unit: risk factors and outcomes. *Jornal de Pediatria*. June 6th. .

Abstract:

OBJECTIVE: This study aimed at evaluating the predictors and outcomes associated with multidrug-resistant gram-negative bacterial (MDR-GNB) infections in an oncology pediatric intensive care unit (PICU).

METHODS: Data were collected relating to all episodes of GNB infection that occurred in a PICU between January of 2009 and December of 2012. GNB infections were divided into two groups for comparison: (1) infections attributed to MDR-GNB and (2) infections attributed to non-MDR-GNB. Variables of interest included age, gender, presence of solid tumor or hematologic disease, cancer status, central venous catheter use, previous *Pseudomonas aeruginosa* infection, healthcare-associated infection, neutropenia in the preceding 7 days, duration of neutropenia, length of hospital stay before ICU admission, length of ICU stay, and the use of any of the following in the previous 30 days: antimicrobial agents, corticosteroids, chemotherapy, or radiation therapy. Other variables included initial appropriate antimicrobial treatment, definitive inadequate antimicrobial treatment, duration of appropriate antibiotic use, time to initiate adequate antibiotic therapy, and the 7- and 30-day mortality.

RESULTS: Multivariate logistic regression analyses showed significant relationships between MDR-GNB and hematologic diseases (odds ratio 5.262; 95% confidence interval [95% CI] 1.282-21.594; $p=0.021$) and healthcare-associated infection (OR 18.360; 95% CI 1.778-189.560; $p=0.015$). There were significant differences between MDR-GNB and non-MDR-GNB patients for the following variables: inadequate initial empirical antibiotic therapy, time to initiate adequate antibiotic treatment, and inappropriate antibiotic therapy.

CONCLUSIONS: Hematologic malignancy and healthcare-associated infection were significantly associated with MDR-GNB infection in this sample of pediatric oncology patients. Thank you to our partners for supporting IVTEAM