The clinical outcomes of pediatric patients with healthcare associated gram-negative infections showed that patients with MDRO has shorter hospital stay which can be explained by their high mortality rate of 78% compared to 41% among patients with non MDRO.

**ABSTRACT**

**BACKGROUND:** Multi Drug Resistant Organisms (MDRO) are microorganisms, predominantly bacteria, that are resistant to one or more classes of antimicrobial agents. Treatment options are often extremely limited. Healthcare-Associated Infections are infections appearing in hospitalized patients not present nor incubating at time of admission. They have been associated with mortality rates of 48% from admission to the hospital, 3 days of discharge or 30 days after an operation.

The objectives of the study is to determine the demographic and epidemiologic data of pediatric patients with healthcare-associated gram-negative bacteremia, incidence of MDRO, antimicrobial susceptibility patterns and clinical outcomes and risk factors for development of medical drug resistance.

**METHODS:** This cross sectional study on pediatric patients with gram negative healthcare-associated MDRO bacteremia compared to non MDRO bacteremia admitted in intensive units (ICU) and pediatric wards of a tertiary government teaching hospital from July 2015 to June 2016. Descriptive statistics was used to summarize the characteristics of the patients. Odds ratio and the corresponding 95% confidence interval from binary logistic regession was computed to determine the significant predictors for the development of multi drug resistance. Null hypothesis was rejected at 0.05 level of significance. STATA 12.0 was used for data analysis.

**RESULTS:** A total of 199 patients were included in the analysis, and 41% were identified to be MDRO cases. The clinical outcomes of pediatric patients with healthcare associated gram negative infections showed that patients with MDRO has shorter hospital stay which can be explained by their high mortality rate of 78% compared to 41% among patients with non MDRO.

**CONCLUSION:** Significant predictors for MDRO were age (0-28 days old) (p=0.042), admission to ICU (p=0.002), having been catheterized (p=0.009) and having parenteral nutrition (p=0.002). However, this model only accounts for 22.42% of the variability of developing into an MDR among the patients (p-value = 0.000; R² = 22.42%).

The most commonly isolated microorganism among the patients was Burkholderia cepacia, which was isolated in 38% of the patients, followed by Klebsiella pneumoniae (31%) and Acinetobacter baumanii (18%).

**CLINICO-EPIEMIOLOGIC PROFILE AND OUTCOMES OF PEDIATRIC PATIENTS WITH MULTI-DRUG RESISTANT GRAM NEGATIVE HEALTHCARE-ASSOCIATED INFECTIONS IN PHILIPPINE GENERAL HOSPITAL**

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**INTRODUCTION**

Few studies have been conducted on Gram negative infections in the pediatric population worldwide. There are even fewer studies done locally about multi-drug resistant organisms both in adult and pediatric population. It is timely to look into the relevant pediatric infection clinical outcomes, risk factors and antimicrobial susceptibility of pediatric patients in a tertiary government hospital, to guide pediatricians to the appropriate empiric therapy, identification of risk factors and prevent adverse outcomes.

**MATERIALS AND METHODS**

This is a cross sectional study with Healthcare-Associated Multi-Drug Resistant Gram Negative Bacteremia cases compared to non Multi-Drug Resistant Gram Negative Bacteremia Cases admitted in ICU and pediatric wards from July 2015 to June 2016. Descriptive statistics was used to summarize the characteristics of the patients. Odds ratio and the corresponding 95% confidence interval from binary logistic regression was computed to determine the significant predictors for the development of multi drug resistance. All valid data were included in the analysis. Missing variables were neither replaced nor estimated. Null hypothesis was rejected at 0.05a-level of significance. STATA 12.0 was used for data analysis.

**RESULTS**

A total of 199 patients were included in the analysis, and 41% were identified to be MDR patients. The profile of the MDR and the non-MDR patients were compared and the variables significantly different for these two groups were age (p=0.000), distribution in admission ward (p=0.000) a few underlying conditions and symptoms (days) (p=0.042), admission to ICU, intravascular catheterization and parenteral nutrition.

**CONCLUSION**

Healthcare-associated Multi Drug Resistant Infection is a growing problem in the pediatric population. Patients with Multi Drug Resistant Gram Negative Bacteremia are usually neonates and they have a shorter length of stay with higher mortality rate. The identified risk factors for Multi Drug Resistant Gram Negative Bacteria were neonates, admission in ICU, intravascular catheterization and parenteral nutrition.