Poster # 407

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IMPACT OF SCREENING/DECONTAMINATION PROGRAM ON COLONIZED PATIENTS WITH MULTIDRUG RESISTANT MICROORGANISM (MDRO) AND THEIR SUBSEQUENT RISK OF INFECTION

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1 Introduction

The optimal strategy for controlling the Multidrug-Resistant microorganisms (MDRO) spread and infection is still controversial. Screening is useful in high-risk units to identify the colonized patients and to initiate contact precautions. Screening (S) and Decolonization (Dc) may be effective in decreasing infection risk in colonized patients. The objective of this study was to determine the risk of developing MDRO infections in patients colonized by Carbapenem-resistant Enterobacteriaceae (CRE), Methicillin-resistant *Staphylococcus aureus* (MRSA) and Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) in a tertiary care hospital through an S/Dc program in Cali – Colombia.

2 Methods

The S/Dc program was performed between April 2014 - July 2017 in adult patients who were referred or readmitted to our institution after being hospitalized for ≥ eight days. The screening was conducted with a nasal and rectal swab (ChromIDTM MRSA agar and ChromIDTM CARBA agar). Chlorhexidine (CHXD) bathing was used daily in all patients of the S/Dc program. Using the R statistical program, we analyzed the period pre and post-intervention. The rates of specific MDRO infections was calculated using tendency graphics with mobile means and the reasons for rates of specific MDRO infections with Poisson regression. We also analyzed a subgroup of hematologic patients and estimated the risk of developing MDRO infections in colonized patients.

3 Results

3408 hospitalized adult patients were screened, 17% were colonized by at least one of the following MDRO: CRE (8.9%), MRSA (3.7%) and CRPA (2.2%) with similar colonization percentages between hematologic and non-hematologic patients

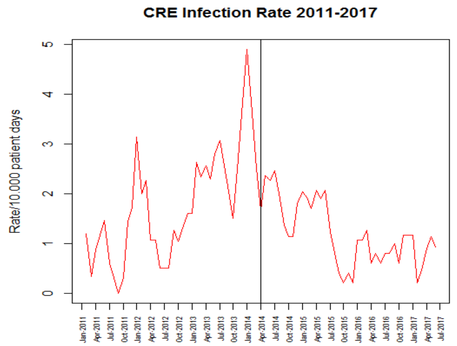

Figure 1. Rate infection ERC 2011 - 2017

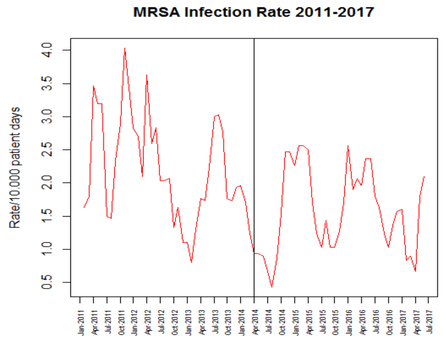

Figure 2. Rate infection MRSA 2011 - 2017

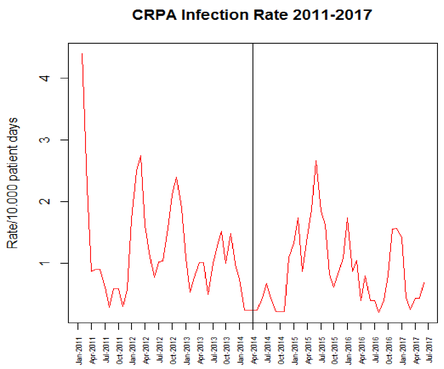

Figure 3. Rate infection CRPA 2011 - 2017

There was a tendency of fewer rates of MDRO infections in all patients post-intervention. The S/Dc program reduced in a 41 % the rate of infection by CRE with IRR 0.59 (IC 0.33-1. 04). For MRSA the reduction was 28% IRR 0. 72 (IC 0.43 – 1.18). However, in the case of CRPA there wasn't any significant effect after the intervention the was IRR 1.21 (IC 0.64 – 2.26).

Of 568 hematologic patients, 11% were colonized by MDRO. In this group there was a higher risk of infection, including MDRO bacteremias compared to the non-colonized group: CRE: RR= 3.3 (IC: 1.81 – 5.91), MRSA RR= 7.5 (IC 1.21 – 46.6) and CRPA RR= 12.3 (IC 3.39 – 44.7).

4 Conclusions

In colonized patients with CRE/MRSA, S and CHXD bathing reduces further MDRO infection or at least attenuates infection risk in these patients.

The hematologic patients had a higher risk of infection when colonized by MDRO especially in the case of CRPA. This may be explained by their significant susceptibility to infection compared to no hematological patients.

5 References

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