

Can Chlorhexidine Bathing Decrease The Incidence Of Carbapenem-resistant Enterobacteriaceae (CRE) Bacteremia In Previously Colonized CRE Hematopoietic Stem Cell Transplant Recipients?

1

Introduction

Carbapenem-resistant Enterobacteriaceae (CRE) can colonize patients that undergo Hematopoietic Stem Cell Transplant (HSCT). These patients have a higher incidence of CRE associated bacteremia (especially during the initial neutropenic period), and have a higher mortality rate. This situation is critical in countries that are highly endemic for CRE, such as Colombia. It is necessary to find a mechanism that can decrease the occurrence of these infections; therefore, creating a safer transplant/environment for high risk patients such as HSCT recipients. Daily use of chlorhexidine (CHX) bathing could be an effective strategy to reduce this risk.

2

Methods

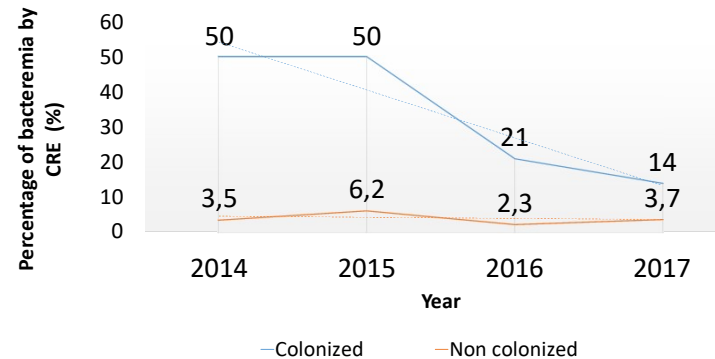
From 2014-2017 in a single hospital in Cali, Colombia, all patients >18 years admitted to the HSCT-unit were screened for CRE colonization using peri-rectal swabs. All of the patients received daily CHX bathing (CHX 4% soap or CHX 2% pads) and prohibition for usage of moisturizing creams. Prospectively, information of patients who developed bacteremia was recorded and the microorganisms isolated. The rate of bacteremia between CRE colonized patients versus non-colonized patients was analyzed. Additionally, a comparison between the percentage of the bacteremia due to other microorganisms within both groups was obtained. Non-parametrical statistic Chi-square test was used to evaluate for statistical significance.

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Results

Data collected from 155 patients from July 2014 to June 2017 was analyzed. Patients had a mean age of 42 years and 39.5% were females. Of the total transplant procedures 60% of them were autologous and 40% were allogeneic. The incidence of CRE-colonized patients was 16% (25/155). These patients had a rate of bacteremia of 34% (54/155). There was a higher incidence of other bacterial bacteremia and CRE associated bacteremia in colonized vs non colonized patients (52% vs 31% and 24% vs 3,8%, respectively, RR: 6.24, 95% CI 2.06-18.8, *p-value*: 0.002). With the increase in compliance/usage of CHX bathing, there was a trend to decrease CRE-bacteremia in the colonized patients. In these patients, CRE bacteremia decreased from 50% in 2014, to 14% in 2017 (OR 0.167 *p-value*: 0.21) [Figure 1].

Figure 1. Rate of CRE Bacteremia in CRE-colonized Patients vs Non-Colonized Patients



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Conclusions

- Daily usage of CHX bathing in the CRE-colonized patient was effective in reducing the incidence of CRE-bacteremia in HSCT patients.
- This strategy has significantly improved patient safety and reduced morbidity and mortality, especially in CRE-colonized hospitalized patients.

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References

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