Isolation of patients with Vancomycin Resistant Enterococci (VRE): Efficacy of an electronic alert system

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Introduction

- **Enterococcus**
  - Bacteria that normally live in digestive and genital tracts
  - Powerful antibiotic, limited to use to already resistant bacteria

- **Vancomycin**
  - Emergence of resistance to antibiotics bacteria
  - Vancomycin Resistant Enterococci
Management of VRE patients

→ Isolation

→ Hand washing

→ Dedicated use of noncritical item
Research Question

Can an electronic alert system for detecting VRE patients, improve the rate of properly patient isolation
Methods

→ Design
  → Before and after, quasi-experimental

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→ Setting
  → Hospital Italiano de Buenos Aires
  • 800 beds Hospital

→ Population
  → Inclusion criteria: patient admitted to adult units, VRE+
  800 beds Hospital
  → Population
  → Inclusion criteria: patient admitted to adult units, VRE+
Intervention

→ Electronic Alert in ADT system
Intervention

→ EHR isolation recommendations reminder
Methods

→ Variables
  → Dependent:
    • Adequate isolation (Y/N)
    • Number of bed rotation (ordinal)
  → Independent:
    • Condition (Before or after alert implementation)
    • Age and gender

→ Effectiveness of the system:
  → Improvement in the proportion of appropriate isolation of VRE patient and or decrease in the number of bed rotation
  → Chi square test homogeneity
Results

Over the 67 patients included in the VRE patient registry there was 112 admissions in the pre-implementation period and 72 in the post-implementation phase.

<table>
<thead>
<tr>
<th></th>
<th>PRE N=112</th>
<th>POST=72</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>62.86 (IQR 25.16)</td>
<td>55.55 (IQR 30.26)</td>
<td>0.131</td>
</tr>
<tr>
<td>SEX MASC</td>
<td>65 (58%)</td>
<td>56 (77.8%)</td>
<td>0.006</td>
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</tbody>
</table>
Results

→ Proper isolation

→ H0: the proportion of properly isolation of patient is the same before and after the alert system implementation

→ $P = <0.001$
Results

→ **Bed Rotation**

→ H0 the number of bed rotation didn’t change

→ $P = < 0.003$
Discussion

→ The result in our study shown an improvement in the proportion of proper isolation and a decrease in the number of bed rotation in the hospital

→ The proportion of adequate isolation increases from 36.6 % to 80.6%

→ Results are consistent with other studies
Limitation

→ Design  Quasi-experimental
→ We did not measure if the number of VRE patient decreased with the intervention
→ We did not take into account important measures like hand washing, correct use of medical equipment
→ We used retrospective data
→ We excluded several important areas such as ICU (adults and pediatrics)
→ We measure only one institution
Conclusion

→ The implementation of an alert system improved the proportion of properly isolation of patient with VRE and limited the number of bed rotation.
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Questions?