

**P1029 Contact isolation for patients with multi-resistant microorganisms with high prevalence upon admission, and for hospitalized patients with low acquired infection incidence: is it really useful?**

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**Background:** Contact isolation (CI) is standard-procedure to avoid multi-resistant microorganism (MRM) transmission. Due to epidemiological changes in some MRM, the need for CI has been reconsidered. It is necessary to determine the relevance of CI for high-prevalence MRM colonized/infected patients upon their admission, and its relevance for low-incidence MRM infection acquired in-hospital.

**Materials/methods:** Quasi experimental study, interrupted time-series design (before-after). It was performed in a 16-bed polyvalent ICU with the following infection control scheme: healthcare-associated infections programme, MRM vigilance programme, antimicrobial stewardship programme, bundle implementation, monitoring of hand-washing adherence, hospital-environment hygiene nursing, cleaning staff for equipment.

We analysed prevalence upon admission for MRM rates, and incidence of acquired infection for MRM rates, both corresponding to 2008-2016. We determined high-prevalence when the rate was  $\geq 15\%$  stable for the last three years, and low-incidence of acquired infection when rate was  $\leq 2\%$  stable for the last three years. The MRM with high-prevalence was extended spectrum beta-lactamase-producing Enterobacteriaceae (ESBL), and low-incidence MRM were ESBL, vancomycin-resistant enterococci (VRE) and methicillin-resistant *Staphylococcus aureus* (MRSA).

The intervention was not to implement CI on colonized/infected patients with ESBL, VRE and MRSA. Two periods were compared: pre-intervention Period A (10/2015-9/2016) vs. intervention Period B (10/2016-9/2017). To look for MRSA, VRE and ESBL, vigilance swabbing upon admission was performed, and weekly swabbing for in-hospital patients.

To evaluate the intervention effect, we calculated ESBL, VRE and MRSA prevalence rate upon admission based on patients with positive swabbing and/or any positive cultures within the first 48 hours/100 admissions. For acquired infection rate, patients with an infection diagnosis after 48 hours of admission/1000 patients-day. Both evaluations apply to both periods. Additionally, during Period B, the number of patients-day that avoided CI were measured. Chi-square test (Diff; CI95%, P value) was used to compare rates of colonized/infected patients upon admission, and standardised infection ratio (CI 95%) for acquired infection rates.

**Results:**

<b>PREVALENCE UPON ADMISSION RATE</b>			
<b>Microorganism</b>	<b>Period A</b> <b>Pre-intervention</b> 850 admissions 4485 patients-day	<b>Period B</b> <b>Post-intervention</b> 969 admissions 4509 patients-day	<b>Test</b>
<b>VRE</b>	0.4% (3/850)	0.8% (8/969)	Diff. (CI 95%):0.5% (-0.2% to 1.2%) p 0.32
<b>MRSA</b>	1.8% (15/850)	0.8% (8/969)	Diff. (CI 95%): -0.9% (-2% to 0.1%) p 0.11
<b>ESBL</b>	15.6% (133/850)	11.3% (110/969)	Diff. (CI 95%): -4.3% (-7.5% to -1.1%) p 0.008
<b>ACQUIRED INFECTION RATE</b>			
<b>VRE</b>	0.2‰ (1/4485)	0.2‰ (1/4509)	SIR (CI 95%) 1.1 (-1.6 to 3.28)
<b>MRSA</b>	No infection cases during the intervention period.		
<b>ESBL</b>	0.9‰ (4/4485)	1.1‰ (5/4509)	SIR (CI 95%) 1.2 (0.15 to 2.31)

The number of isolated patients was reduced to 953 days.

**Conclusion:** Our analysis shows that, under the conditions described, it is safe not to implement CI for ESBL, MRSA and VRE colonized/infected patients.