

Incorporation of second generation chlorhexidine-silver-sulfadiazine-impregnated catheters in an adult intensive care unit.

Paniagua M, Paz V, Santillán A, Orellana R, D'Agostino L, Rodriguez C. Sanatorio de Los Arcos, CABA, Argentina.



Introduction

As part of an improvement program to reduce the catheter-related bloodstream infection (CRBI) rate, chlorhexidine-silver-sulfadiazine-impregnated central venous catheters (CHSS-CVCs) were placed. The objective of this work was to determine if CHSS-CVCs were able to reduce CRBI rate in an intensive care unit which has a low baseline infection rate.

Method

A quasi-experimental study with an interrupted time-series design (before-after) in a 12-bed polyvalent ICU was performed. The intervention was to add CHSS-CVC to patients who needed intravenous therapy for 7 days or more. Both CRBI rates were compared: pre-intervention period A (from May 2016 to September 2017) vs post-intervention period B (from October 2017 to April 2019). The previous CVCs strategies in place were: 2% alcoholic chlorhexidine to skin antiseptis, insertion and care bundles, chlorhexidine gluconate dressing, needleless connectors, exclusive Link Nurse. Our ICU infection control scheme includes: healthcare-associated infections surveillance programme, antimicrobial stewardship programme, monitoring of hand-washing adherence, OMR surveillance programme upon admission and weekly, cleaning staff for equipment. The definition of CRBI was taken from National Surveillance Program of Argentina (VIHDA). Patients with ≤ 48 hours CVC in place were excluded. The following variables were analyzed: CRBI rate ‰ patients/days (SIR: standardized infection ratio, CI 95%), age and APACHE II (median, Q1-Q3).

Results

Variables	Period A Pre-Intervention	Period B Post-Intervention	Comparison
Male Sex % (n)	58% (250/431)	60% (176/295)	<i>p</i> 0.645
Age Median (IQR)	65 (50-76)	61 (45-72)	<i>p</i> 0.0044
APACHE II Median (IQR)	21 (15-27)	20 (15-26)	<i>p</i> 0.2923
CRBI rate ‰ (N CRBI /catheter days)	1.78‰ (8/4486)	0.55‰ (2/3604)	SIR (IC 95%) 0.251 (0.0281, 0.9049)

Conclusion

Under these conditions, patients with CVC CHG/SP had a statistically significant reduction in CRBI rate. The inclusion of CVCs CHG/SP further reduces a previously low baseline infection rate.