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Poster Session II
Targeting zero S. aureus and CVC-BSI

LOWER CATHETER FAILURE AND LONGER DWELL TIME USING A CLOSED PERIPHERAL VENOUS CATHETER SYSTEM (CPVCS) WITHOUT SCHEDULED REPLACEMENT: A QUASI-EXPERIMENTAL STUDY.

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Objective: To compare the frequency of peripheral venous catheter (PVC) failures in a group of patients using clinical replacement of a closed peripheral catheter system (CPVCS) versus other group with scheduled replacement at 72h of PVC according to the hospital guidelines.

Methods: A quasi-experimental study was performed in two medical and one surgical ward at Bellvitge University Hospital, a 700-bed reference teaching hospital in Barcelona area. The study was approved by the hospital Ethical Committee. The primary outcome was catheter failure (CF) defined as a composite of unscheduled removal of PVC because of phlebitis, extravasation, accidental removal or suspected infection. Rate of catheter failure using scheduled replacement at 72 hours of standard hospital PVCs (Braun Introcan Safety®/Intima BD®) (pre-intervention period, Feb-Mar 2013), was compared to rate of catheter failure using unscheduled replacement of a CPVCS (BD Nexiva™) (intervention period, May-July 2013). Catheters placed at study wards were included and prospectively followed daily by an infection control nurse or physician.

Results: From February to July 2013, 822 patients were prospectively followed at study wards. Among them, 915 PVCs were placed and included for follow-up (2,851 catheter-days). In the pre-intervention period 620 PVCs were placed (216 Introcan and 404 Intima) and in the intervention period 295 CPVCS. Rate of catheter failure was 137 episodes per 1,000 PVC-days in the pre-intervention period and 97 episodes per 1,000 PVC-days in the intervention period (Rate ratio: 1.4; 95%CI: 1.1-1.7). When rates of catheter failure were analysed according to type of PVC, rate of CPVCS (97 episodes per 1,000 PVC-days) were lower than rate of Introcan (167 episodes per 1,000 PVC-days) (p<.001) as well as than Intima (148 episodes per 1,000 PVC-days) (p<.001). When time *in situ* was analysed, median dwell time for CPVCS was higher (3 days, IQR: 2-6 days) than Introcan (3 days, IQR: 1-3 days, p<.001) and Intima (3 days, IQR: 2-3 days, p<.001). There were no local infections or catheter related bacteraemia.

Conclusions: The use in hospitalized patients of a CPVCS with clinical replacement resulted in a lower rate of catheter failure than scheduled replacement and significantly prolonged dwell time. These results may contribute to a reduction of catheter insertions, patient discomfort, hospital cost and healthcare workload.