



We aimed to estimate the rate and incidence of PIVC failure at Manacor hospital (Spain) as baseline within a wider quality improvement initiative” Blanco-Mavillard et al (2019).

Abstract:

BACKGROUND: Peripheral intravenous catheters (PIVCs) are the most widely used invasive devices among inpatients. Catheter-related bloodstream infections (CRBSI) are serious yet preventable events for patients. Although the contribution of PIVCs towards these infections is gradually being recognised, its role in the Spanish setting is yet to be determined. We aimed to estimate the rate and incidence of PIVC failure at Manacor hospital (Spain) as baseline within a wider quality improvement initiative.

METHODS: Tips from all PIVC removed during December 2017 and January 2018 in hospital wards were cultured semiquantitatively. The study population included all PIVCs inserted in adult patients admitted to any of three medical and one surgical wards, emergency department, critical care unit and operating rooms. Clinical, microbiological and ward information was collected by clinical researchers for each PIVC from insertion to removal on the study sites. CRBSI was defined per international guidelines (i.e., Centers for Disease Control and Prevention, USA). Data was analysed descriptively.

RESULTS: Seven hundred and eleven tips were cultured, with 41.8% (297/711) reported as PIVC failure. The PIVC failure rate density-adjusted incidence for hospital length of stay

(HLOS) was 226.2 PIVC failure/1000 HLOS. 5.8% (41/711) tips yielded positive isolates, with most frequent microorganisms *Staphylococcus* spp (*S. epidermidis* 29/41, 70.7%, *S. aureus* 2/41, 4.9%, *S. hominis* 2/41, 4.9%), and *Acinetobacter baumannii* (1/41, 2.4%). One *S. aureus* isolate was methicillin-resistant. 53.6% (22/41) positive cultures were obtained from patients with local signs and symptoms compatible with catheter-related infection (CRI), 2.4% (1/41) were compatible with CRBSI type 2 and that clinical signs improve within 48 h of catheter removal (density-adjusted incidence for hospital stays of 16.7 PIVC-CRI/1000 hospital-stays and 0.76 PVC-BSI/1000 hospital-stays respectively) and no patients were diagnosed CRBSI type 3 with a bacterial growth concordant in tip and blood cultures. Most cases responded favourably to catheter removal and management.

CONCLUSIONS: Our findings show that almost 42% PIVCs resulted in unplanned removal, amplifying the importance in terms of morbidity, mortality and patient safety. A high number of positive tip cultures without clinical signs and symptoms was observed. We underpin the importance to remove unnecessary PIVCs for the prevention of CRBSI.

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Reference:

Blanco-Mavillard, I., Rodríguez-Calero, M.Á., de Pedro-Gómez, J., Parra-García, G., Fernández-Fernández, I. and Castro-Sánchez, E. (2019) Incidence of peripheral intravenous catheter failure among inpatients: variability between microbiological data and clinical signs and symptoms. *Antimicrobial Resistance and Infection Control*. July 22nd. doi: 10.1186/s13756-019-0581-8. eCollection 2019.

