

P2559 Peripheral intravenous catheters: can the tourniquets and dressings used influence associated contamination rates?Nádia Osório¹, Vânia Oliveira², Paulo Costa², Anabela Salgueiro-Oliveira²¹ Instituto Politécnico de Coimbra, Escola Superior de Tecnologia da Saúde de Coimbra, Coimbra, Portugal, ² Health Sciences Research Unit: Nursing, ESEnfC - Nursing School of Coimbra, Coimbra, Portugal

Background: The insertion of peripheral intravenous catheters (PIVCs) is one of the most invasive procedures performed in hospital settings, where the risk of infection increases exponentially. Furthermore, there is evidence that medical devices used in the insertion and maintenance of PIVCs, such as tourniquets and dressing material, may influence the risk of associated microbiological contamination. Therefore, with this study, we aim to assess if the degree of PIVCs contamination is associated with the type of tourniquet used during vein selection and with the type of dressing used for catheter securement.

Materials/methods: This study was carried out in a cardiology ward from a large tertiary hospital in the central region of Portugal. Ethics Committee approval was obtained and all samples were collected after obtaining formal patient consent. PIVCs tips were collected in two different phases: in Phase 1, samples were collected (n=37) from PIVC that were inserted with the help of reusable tourniquets and secured with a transparent film dressing; in Phase 2, samples were collected (n=40) from PIVCs inserted with single-use disposable tourniquets, and secured with transparent film dressing with reinforced borders. In both phases, PIVCs tips (2 cm) were inoculated on Columbia agar using the Maki technique, with macroscopically different isolates being enumerated and isolated for later identification using biochemical galleries.

Results: PIVCs contamination rates decreased from Phase 1 (48.6%) to Phase 2 (22.5%). Furthermore, between phases, the decrease of PIVCs contaminated with $\geq 1 \times 10^4$ colony-forming units was 25%. In both phases, the main isolated microorganisms belong to the Staphylococcus genus, namely coagulase-negative.

Conclusions: Given the observed results between phases, the use of disposable tourniquets and transparent film dressings with reinforced borders is shown to be an asset in the potential reduction of PIVCs contamination rates. Nonetheless, despite the reduction in PIVCs contamination rates, the presence of microorganisms with significance for clinical practice, such as the coagulase-negative Staphylococcus, indicates that there is still a need for greater control of clinical practices during PIVCs insertion and maintenance to ensure safer and efficient patient care.

