

Abstract:

INTRODUCTION: Data concerning the use of peripherally inserted central catheters (PICC) for the administration of intravenous (IV) antimicrobials in the acute care setting is scarce.

METHODS: We performed a single-center retrospective case-control study (1:1). Case subjects were defined as patients who received IV antimicrobial treatment through a PICC line placed and maintained by specifically trained nurses (PICC group). Control subjects were defined as patients who received antimicrobial therapy by a peripheral or a central venous catheter (CVC) (control group). Control subjects were matched by type of antimicrobial, causative microorganism of the infection that was being treated and duration of treatment. An event leading to undesired catheter removal (ELUCR) was defined as any circumstance which lead to the removal of the indwelling catheter other than the completion of the scheduled course of antimicrobial therapy.

RESULTS: The study included 50 patients in each group. The total follow-up time was 1376 catheter-days for the PICC group and 1362 catheter-days for the control group. We observed a significantly lower incidence of ELUCR in the PICC group (0.2 versus 7.7 events per 100 catheter-days; $P < 0.001$). When the incidence of ELUCR was analyzed according to the duration of indwelling catheterisation for each type of catheter (divided into one-week intervals), differences between both groups were also significant (P -values ≤ 0.001 for the first three weeks of treatment). During the second week of IV treatment, only one patient in the PICC group (2.1%) developed an ELUCR compared to 19 (38.8%) in the control group ($P < 0.001$).

CONCLUSIONS: A PICC placed and maintained by a dedicated nursing team is an excellent alternative to peripheral venous catheters or CVCs for administrating antimicrobial therapy for both short and long periods of treatment.

Reference:

Silva, J.T., Lagares-Velasco, A., Fernández-Ruiz, M., González-Monterrubbio, G., Pérez-Cárdenas, M.D., Aguado, J.M. and López-Medrano, F. (2020) Peripherally inserted central venous catheter placed and maintained by a dedicated nursing team for the administration of antimicrobial therapy vs. another type of catheter: a retrospective case-control study. *Enfermedades Infecciosas y Microbiología Clínica*. February 11th. doi: 10.1016/j.eimc.2020.01.005.