

PICC lines versus Central Venous Catheters; Are PICC lines harmful?

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Introduction: When injecting irritating substances intravenously a central venous access may be used to redirect the substance away from fragile peripheral veins to the central circulation. There are two main types of central venous access, the Peripherally Inserted Central Catheter line (PICC line) and the Central Venous Catheter (CVC). However, there is an ongoing debate concerning an observed higher mortality amongst patients who receive a PICC line compared to those who receive a CVC.

Aims: This study aimed to compare the all-cause 30-day mortality between patients receiving a PICC line and those receiving a CVC. Secondary aims were to compare the time each insertion takes, to analyze the cost efficiency of each procedure.

Materials and Method: All patients with an KVÅ code in Danderyds hospital **SPOR-data** base corresponding to the insertion of a central venous access were included, this resulted in 939 patients with a PICC line and 728 patients with a CVC. The all-cause 30-day mortality was analyzed using a logistical regression analysis, adjusted for age, sex and ASA class.

Results: It was found that there was a significantly lower all-cause 30-day mortality in the PICC line group when adjusting for confounders, expectant value 0.756 (confidence interval 0.573-0.998, p-value 0.049). PICC lines took less time to insert.

Conclusions: PICC lines in and of themselves are not the cause of the observed higher mortality, but rather patients with worse prognosis are more likely to receive a PICC line. Further, insertions of PICC lines are more cost efficient, however further analysis of non-lethal complications is needed.

Keywords: Central Venous Access, PICC line, Central Venous Catheter, Central Venous Line, 30-day Mortality, All-Cause Mortality