This study was aimed to evaluate the accuracy and safety of bedside electrocardiograph (ECG)-guided tip location technique in PICC in cancer patients, and compared with traditional chest radiography tip location technique” Li et al (2018).

Abstract:

BACKGROUND & OBJECTIVES: The peripherally inserted central catheter (PICC) has the advantages of higher safety, lower infection rate and longer retention time than peripherally inserted catheter. This study was aimed to evaluate the accuracy and safety of bedside electrocardiograph (ECG)-guided tip location technique in PICC in cancer patients, and compared with traditional chest radiography tip location technique.

METHODS: Patients were randomly assigned into two groups: The ECG test group patients underwent PICC insertion with ECG-guided tip location, while the control group patients had PICC insertion by the conventional method. The precision of tip location was verified by chest radiography in both groups. The groups were compared with regard to the accuracy of tip placement, anxiety levels before and after the procedure; medical cost and incidence of complications at one week, three months and six months after PICC insertion.

RESULTS: Accurate tip location was achieved in 99.30 per cent in the ECG test group vs 92.30 per cent in the control group (P<0.001). At 24 h after the procedure, the anxiety level was significantly lower in the ECG test group. The presence of thrombogenesis was significantly lower in the ECG test group at both three months and six months after the procedure (P=0.04 and P=0.03, respectively). INTERPRETATION & CONCLUSIONS: The ECG-guided PICC tip location technique was accurate and caused fewer procedure-related complications and less anxiety in patients compared to chest radiography tip location technique. Radiographic confirmation of PICC tip position may not be needed when ECG guidance is used and thus it can help avoid radiation exposure.

Reference: