To evaluate the safety and utility of ultrasonography as a tool to confirm central venous catheter (CVC) position and to exclude insertion-related pneumothorax in place of chest radiography (CXR) in a tertiary medical intensive care unit (ICU)” Raman et al (2017).

Abstract:

AIM: To evaluate the safety and utility of ultrasonography as a tool to confirm central venous catheter (CVC) position and to exclude insertion-related pneumothorax in place of chest radiography (CXR) in a tertiary medical intensive care unit (ICU).

METHODS: We randomized 60 consecutive medical ICU patients to conventional or ultrasound groups for CVC placement. Both groups had CVCs inserted under ultrasound guidance. The intervention group underwent real-time transthoracic echocardiography to assist in catheter positioning and chest ultrasonography for exclusion of pneumothorax. Our primary end point was reduction in CXR use. The secondary end point was time elapsed from the end of procedure to the availability of CVC for use. χ2 test was used to compare the 2 groups for the primary end point. T test was used to compare the 2 groups for the secondary end point.

RESULTS: Thirty patients were randomized to the conventional group and 30 were randomized to the ultrasound group. One patient was excluded in the control group since the procedure needed to be aborted. Patient characteristics were well matched for age, body mass index, and acute physiologic assessment and chronic health evaluation (APACHE III) scores. There was a 56.7% ( P < .0001) reduction in CXR use in the ultrasound arm. Mean time to use was 53.6 minutes in the control group and 25 minutes in the ultrasound arm ( P = .0015). Mean time required to complete the procedure was 27.7 minutes in the control group and 24.1 minutes in the ultrasound group ( P = .2053). No pneumothorax was detected in either arm.
CONCLUSION: Ultrasound-guided CVC placement and positioning with a minor modification in technique reduced the use of bedside CXR and reduced the time to use of the CVC.

Reference:

Thank you to our partners for supporting IVTEAM