Abstract:

BACKGROUND: Long-term central venous catheter (CVC) insertion in dialysis patients is an accepted method of hemodialysis. The appropriate CVC tip placement may reduce both early and late complications related to catheter and increase patency rate. This study aimed to evaluate a new, simple, and feasible method based on surface anatomy for the proper placement of tunneled CVC in the left internal jugular vein for hemodialysis or chemotherapy.

MATERIALS AND METHODS: The study was carried out as a quasi-experimental model at Saint Al-Zahra Education Hospital in 2016. A total of forty patients with an indication of left-sided (upper) long-term CVC insertion were enrolled. The length of catheter to be inserted in the left internal jugular vein was considered as the sum of distance from the insertion point of the needle up to sternal notch plus the total distance between the left and right sternoclavicular joint and half-length of the sternum. The right atrium (RA) or superior vena cava-RA junction was the correct region for inserting the catheter tip. The collected data were analyzed using Fisher’s exact test and t-test using SPSS (version 22).

RESULTS: The patients were 63.75 ± 17.96 years of age, weighed 67.33 ± 13.20 kg, and height of 166.92 ± 8.99 cm. Catheters were inserted successfully in 95% of patients (n = 38). No significant relationship was found between the success of new method and age, gender, height, weight, body mass index, and sternum half-length plus the distance between the right and left sternoclavicular joint.

CONCLUSION: “The mid – sternal length plus sternoclavicular joints spacing” as a new formula (based on anatomical landmarks) was found practical and safe and could easily be used among adult patients who undergo tunneled CVC in the left internal jugular vein.

Reference: