



COMPARISON OF THE EFFECTIVENESS OF INTERNAL JUGULAR AND SUPRACLAVIAN APPROACH IN ULTRASOUND-GUIDED CENTRAL VENOUS CATHETER INSERTION AT RSUP H. ADAM MALIK MEDAN



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INTRODUCTION

The internal jugular approach and the supraclavicular approach are two of the few venous catheterizations reported in the literature. The supraclavicular approach to central venous catheterization has distinct advantages over the internal jugular approach. The incidence of complications in central venous catheter placement can be reduced by the use of ultrasound. This study was conducted to compare the effectiveness of ultrasound-guided CVC insertion between the internal iugular and supraclavian approach on adult patients.

METHOD

This study uses a quasi-experimental method (quasi-experimental) with a research method that does not use random assignment. With a minimum sample size of 53 samples

In this study, there were 56 subjects, 28 of whom underwent supraclavicular procedures and 28 of whom underwent internal jugular procedures. In the study using Chi Square, there was no significant differences between both approaches for the accuracy of central venous catheter tip depth ($p = 1,000$); while for the analysis of the insertion speed, using the Independent T-Test test, a p value of 0.017 ($p < 0.05$) was obtained, indicating there is a significant difference between both approaches in inserting CVC.

RESULTS

Characteristics	Internal jugular (n (%))	Supraclavicular (n (%))	Total (n(%))
Gender			
• Male	16 (28.6)	17 (30.4)	33 (58.9)
• Female	12 (21.4)	11 (19.6)	23 (41.1)
Age			
• 21 – 30	2 (3.6)	3 (5.3)	5 (8.9)
• 31 - 40	2 (3.6)	2 (3.6)	4 (7.2)
• 41 - 50	5 (8.9)	3 (5.3)	8 (14.2)
• 51 - 60	6 (10.7)	12 (21.4)	18 (32.1)
• 61 - 70	10 (17.8)	7 (12.5)	17 (30.4)
• > 70	3 (5.3)	1 (1.8)	4 (7.2)

Approaches	Accuracy		Total (n(%))	P value
	Accurate (n(%))	Inaccurate (n(%))		
Internal jugular	23 (82.14)	5 (17.86)	28 (50)	1,000
Supraclavicular	23 (82.14)	5 (17.86)	28 (50)	
Total	46 (82.14)	10 (17.86)	56 (100)	

Time (minutes)	Mean $\pm$ SD	P value
Internal jugular	19.64 $\pm$ 2.18	0.017
Supraclavicular	21.11 $\pm$ 2.28	
Total	20.28 $\pm$ 2.33	

CONCLUSION

There is a significant difference in the effectiveness of inserting CVC using the internal jugular approach compare to supraclavicular approach ; seen from the superior time of CVC insertion using the internal jugular approach. The comparison of accuracy of CVC tip depth between the two approaches did not have a significant difference.

Keywords : CVC, internal jugular approach, supracalvicular approach