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Association between the use of short-term central catheters in a Brazilian intensive care unit and clinical outcome: a cross-sectional study

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Introduction: Central venous catheters (CVCs) are indicated for invasive hemodynamic monitoring and the administration of vasoactive drugs. These devices are recommended for critically ill patients requiring highly complex care, particularly when multiple attempts at peripheral catheter insertion have failed. **Objective:** To associate the use of central venous catheters (CVCs) in a Brazilian Intensive Care Unit, regarding the main medications infused and the puncture site, with the clinical outcome.

Methods: This cross-sectional, quantitative, documentary study was conducted in the intensive care unit of a university hospital in Rio de Janeiro State, Brazil, between September and October 2024. Fisher’s exact and chi-square tests were used to assess the association between catheter use and hospitalization outcomes (discharge or death). All ethical principles of the Declaration of Helsinki were followed.

Conclusions: These findings underscore the importance of monitoring patients receiving vasopressors and selecting appropriate insertion sites to enhance patient safety and clinical outcomes.

References
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Table 1. Association between infusions and procedures related to catheter use and hospitalization outcomes. N=114. Rio de Janeiro, Brazil, 2024.

Variables	Hospitalization outcome		OR (95%CI)	p-value
	Discharge N (%)	Death N (%)		
Vasopressors				0,004†
Yes	26 (40,0)	39 (60,0)	3,09 (1,42; 6,72)	
No	33 (67,35)	16 (32,65)	-	
Catheter insertion site				0,136‡
Left femoral	8 (38,1)	13 (61,9)	1,21 (0,21; 6,92)	
Right femoral	15 (68,18)	7 (31,82)	0,35 (0,06; 2,0)	
Right internal jugular	23 (62,16)	14 (37,84)	0,45 (0,08; 2,34)	
Left internal jugular	8 (40,0)	12 (60,0)	1,12 (0,19; 6,43)	
Left subclavian	2 (28,57)	5 (71,43)	1,87 (0,20; 17,26)	
Right subclavian	3 (42,86)	4 (57,14)	-	

Notes: † Chi-square test. ‡ Fisher’s exact test. 95% CI = 95% Confidence Interval. * Category not considered. | Not calculated due to lack of information.

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