



In vascular access practices, the internal vessel size is considered important, and a catheter to vessel ratio (CVR) is recommended to assist clinicians in selecting the most appropriate-sized device for the vessel” Spencer and Mahoney (2017).

Abstract:

In vascular access practices, the internal vessel size is considered important, and a catheter to vessel ratio (CVR) is recommended to assist clinicians in selecting the most appropriate-sized device for the vessel. In 2016, new practice recommendations stated that the CVR can increase from 33 to 45% of the vessels diameter. There has been evidence on larger diameter catheters and increased thrombosis risk in recent literature, while insufficient information established on what relationship to vessel size is appropriate for any intra-vascular device. Earlier references to clinical standards and guidelines did not clearly address vessel size in relation to the area consumed or external catheter diameter. The aim of this manuscript is to present catheter-related thrombosis evidence and develop a standardized process of ultrasound-guided vessel assessment, integrating CVR, Virchow’s triad phenomenon and vessel health and preservation strategies, empowering an evidence-based approach to device placement.

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Through review, calculation and assessment on the areas of the 33 and 45% rule, a preliminary clinical tool was developed to assist clinicians make cognizant decisions when placing intravascular devices relating to target vessel size, focusing on potential reduction in catheter-related thrombosis. Increasing the understanding and utilization of CVRs will lead to a safer, more consistent approach to device placement, with potential thrombosis reduction strategies. The future of evidence-based data relies on the clinician to capture accurate vessel measurements and device-related outcomes. This will lead to a more dependable data pool, driving the relationship of catheter-related thrombosis and vascular assessment.

#### Reference:

Spencer, T.R. and Mahoney, K.J. (2017) Reducing catheter-related thrombosis using a risk reduction tool centered on catheter to vessel ratio. *Journal of Thrombosis and Thrombolysis*. October 11th. .

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