Proactive Assessment of Peripheral Venous Heritage: Standardized Approach to Appropriate Vascular Access Device Selection

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Background
Inadequate peripheral venous assessment and poor selection of appropriate vascular access devices contribute to compromised venous heritage and increased complications. Evidence-based systematic approaches to device selection remain underdeveloped in many clinical settings.

Objectives
To test a procedural tool for systematic venous heritage assessment and develop an algorithm to prioritize vascular access device selection based on clinical parameters.

Methods
Pilot experimental monocentric study conducted in two medical wards over eight weeks. Study groups (intervention n=60; control n=58) received standardized venous heritage assessment tool at admission and discharge. Only intervention group used device selection algorithm incorporating venous status, therapy type, and clinical priorities. Outcomes measured: venous heritage preservation, device appropriateness, temporal prioritization compliance.

Results
Intervention group demonstrated better peripheral venous heritage preservation ($p=0.0745$, approaching statistical significance). However, temporal prioritization defined by algorithm was not consistently implemented in either ward group, suggesting need for enhanced compliance mechanisms. Current protocols require modification to align with medical ward patient characteristics.

Conclusions
While limited by sample size, structured assessment tools and selection algorithms show promise for improving device appropriateness and venous heritage preservation. Successful implementation requires extended pilot phases, intensive nurse training, and organizational culture change emphasizing routine venous assessment. Multicenter studies recommended to confirm findings.