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THE RETURN OF SUBCLAVIAN CANNULATION IN THE CRITICAL CARE SETTING: A WESTERN CRITICAL CARE EXPERIENCE

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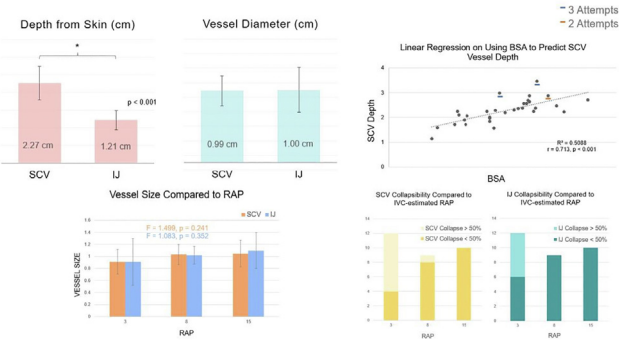
BACKGROUND: While subclavian vein (SCV) cannulation offers many advantages over alternative sites for central venous access, ultrasound (US)-guided cannulation of the internal jugular (IJ) vein has become the standard of care in most critical care settings. This is mostly attributable to the higher rates of mechanical complications from the traditional landmark (LM)-approach of SCV cannulation and the widespread availability of point-of-care ultrasonography (POCUS). However, there is limited literature exploring the feasibility of US-guided SCV cannulation in the critical care setting. This proof-of-concept study aims to determine the applicability of this technique in a critical care setting.

METHODS AND RESULTS: Informed consent was obtained from forty-one patients in a critical care setting to participate in the study and to undergo SCV cannulation. The procedure was performed with real-time US guidance. Attempts, success rate, and complications were recorded. These parameters are compared directly to the operator's IJ cannulation database that included 156 IJ cannulations. For the SCV group, ultrasound images of their SCV and IJ were taken along with a formal assessment of their IVC and analyzed to identify the determinants of a safer SCV cannulation. Finally, Coronary Care Unit (CCU) nurses were surveyed anonymously on their personal preference in central access positions. All forty SCV cannulations successful with on average 1.2 attempts. In contrast, IJ cannulation saw 6 failures to cannulate (4%) and on average 1.1 attempts. Three SCV cannulations (7.5%) resulted in mispositioning of the catheter tip compared to 4% in the IJ group. There were zero pneumothorax or hemothorax in both groups. The ultrasound data showed that SCV runs deeper than IJ by 1 cm on average. Both vessels are similar in size and their maximal diameter do not change significantly with volume status. Both vessels also remain relatively patent (collapse $<$ 50% on inspiration) with an estimated right atrial pressure (RAP) of 8 or 15. At a lower RAP, IJ tends to be more patent than SCV. Finally, 13 of 15 surveyed CCU nurses prefers SCV access for its convenience and patient comfort.

CONCLUSION: Overall, while US-guided SCV cannulation is slightly more complicated, both can be achieved in a timely manner with minimal number of attempts. The complication rates are similar, except for a higher likelihood of catheter malposition, which can be mitigated with modifications in technique. Finally, expertise garnered from this study is instrumental in informed decision making in instituting SCV cannulation in a critical care setting.

	SCV	IJ
Number Performed	40	156
Failed Cannulation	0	6
Average Attempts	**1.2** ±0.57	**1.1** ±0.41
Most # of Attempts	3	5
Malposition	3 (7.5%) 1 into IJ, 2 into innominate	6 (4%) All into SCV
Pneumothorax/ Hemothorax	**0**	**0**
Arterial Puncture	0	3



Canadian Cardiovascular Society (CCS) Abstracts — CAD General

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A COMPARISON OF SYNTHETIC DATA GENERATION AND FEDERATED ANALYSIS FOR PERFORMING AN INTERNATIONAL ASSESSMENT OF GENDER EFFECTS ON CARDIOVASCULAR HEALTH

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BACKGROUND: Cardiovascular diseases (CVD) are the leading cause of mortality and morbidity worldwide. Whether sex is associated with outcomes in patients with CVD differently across countries remains unknown. Assessing the interaction between sex and psycho-socio-cultural factors (gender) and country requires merging of country specific databases. Privacy concerns are barriers to data access and sharing. Therefore, we assessed the feasibility of pooling data from Canadian and Austrian populations to assess country-level differences in the role of sex, gender in cardiovascular health (CVH) using federated analysis and data synthesis.

METHODS AND RESULTS: The datasets used were from the Canadian Community Health Survey (CCHS), and the Austrian Health Interview Survey (ATHIS) in 2014. Only CCHS dataset was synthesized using sequential classification and regression trees. The privacy of the CCHS synthetic data was assessed using a membership disclosure test and F1 score. The low value means that the dataset can be deemed