

LHP 34 – LVO and VAN Scores w/ Guests Dr. Wampler and Kidd

Show Notes

Citation:

Birnbaum L, Wampler D, Shadman A, de Leonni Stanonik M, Patterson M, Kidd E, Tovar J, Garza A, Blanchard B, Slesnick L, Blanchette A, Miramontes D.

Paramedic utilization of Vision, Aphasia, Neglect (VAN) stroke severity scale in the prehospital setting predicts emergent large vessel occlusion stroke. *J Neurointerv Surg.* 2020.

Link: <https://pubmed.ncbi.nlm.nih.gov/32611621/>

Abstract:

BACKGROUND: Numerous stroke severity scales have been published, but few have been studied with emergency medical services (EMS) in the prehospital setting. We studied the Vision, Aphasia, Neglect (VAN) stroke assessment scale in the prehospital setting for its simplicity to both teach and perform. This prospective prehospital cohort study was designed to validate the use and efficacy of VAN within our stroke systems of care, which includes multiple comprehensive stroke centers (CSCs) and EMS agencies.

METHODS: The performances of VAN and the National Institutes of Health Stroke Scale (NIHSS) ≥ 6 for the presence of both emergent large vessel occlusion (ELVO) alone and ELVO or any intracranial hemorrhage (ICH) combined were reported with positive predictive value, sensitivity, negative predictive value, specificity, and overall accuracy. For subjects with intraparenchymal hemorrhage, volume was calculated based on the ABC/2 formula and the presence of intraventricular hemorrhage was recorded.

RESULTS: Both VAN and NIHSS ≥ 6 were significantly associated with ELVO alone and with ELVO or any ICH combined using χ^2 analysis. Overall, hospital NIHSS ≥ 6 performed better than prehospital VAN based on statistical measures. Of the 34 cases of intraparenchymal hemorrhage, mean \pm SD hemorrhage volumes were 2.5 \pm 4.0 mL for the five VAN-negative cases and 17.5 \pm 14.2 mL for the 29 VAN-positive cases.

CONCLUSIONS: Our VAN study adds to the published evidence that prehospital EMS scales can be effectively taught and implemented in stroke systems with multiple EMS agencies and CSCs. In addition to ELVO, prehospital scales such as VAN may also serve as an effective ICH bypass tool.

2 X 2 Contingency Table

		True class		Measures
		Positive	Negative	
Predicted class	Positive	True positive <i>TP</i>	False positive <i>FP</i>	Positive predictive value (PPV) $\frac{TP}{TP+FP}$
	Negative	False negative <i>FN</i>	True negative <i>TN</i>	Negative predictive value (NPV) $\frac{TN}{FN+TN}$
Measures		Sensitivity $\frac{TP}{TP+FN}$	Specificity $\frac{TN}{FP+TN}$	Accuracy $\frac{TP+TN}{TP+FP+FN+TN}$

Special Guests Dr. David Wampler and Dr. Emily Kidd



Our thoughts go out to Williamson County EMS on the loss of FTO Lisa Dalton. Here she is with her husband Jamie Dalton. We'll miss you, Lisa!

