



The Effect of a Near-Infrared Light Vein Viewing Device on the Venipuncture Success Rate in Pediatric Patients

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Abstract

Venipuncture is a necessary and common intervention in hospitalized patients, and can be especially challenging in children, often requiring multiple attempts. It is also described as one of the greatest sources of pain and anxiety by these children. First attempt success rates for venipunctures performed by staff nurses in pediatric patients have been reported from 44% to 53%. The purpose of this study is to evaluate the effect of a specific biomedical device on venipuncture success rates in children.

Methods

- Subjects: pediatric surgical patients requiring vascular access and who meet inclusion criteria
- Baseline data collected by staff nurses
- IRC approval
- Training for all nurses: device competency and NIH Research on Human Subjects module
- Parental informed consent/child assent
- Study data collected by staff nurses

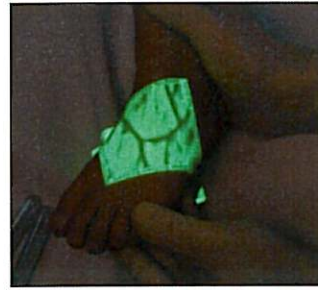
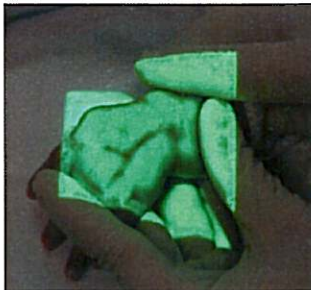
PEDIATRIC VASCULAR ACCESS INITIATION DATA COLLECTION

DATE	TIME	W/	W/C	W/T	W/O	TIME

NOTE: SPECIFY DATE, MONTHS OR YEARS FOR AGE
TIME: 0-15 MIN., 15-30 MIN., >30 MIN.

PEDIATRIC VASCULAR ACCESS INITIATION DATA COLLECTION

DATE	TIME	W/	W/C	W/T	W/O	TIME



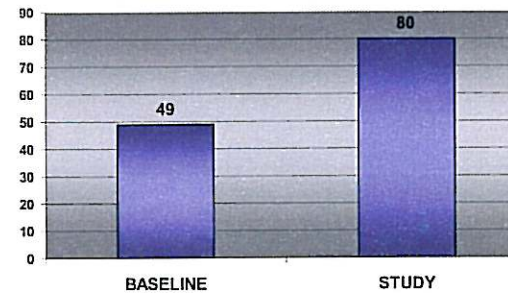
Research Question

“To what extent does the use of a biomedical device to facilitate vascular access improve first attempt vascular insertion in hospitalized pediatric surgical patients when compared to baseline data?”

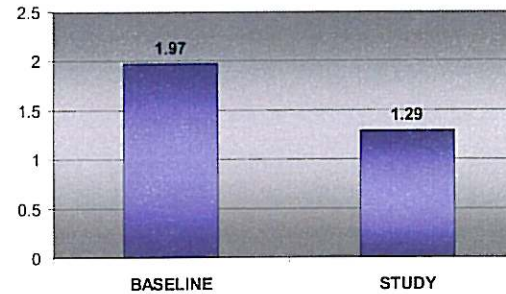
Results

	n=	Mean Age -Years	First Attempt Success Rate	Mean # Attempts/Patient
Baseline	150	5.72	49.3%	1.97
Study	45	8.38	80%	1.29

FIRST ATTEMPT SUCCESS RATE (%)



NUMBER OF ATTEMPTS/PATIENT



Discussion/Conclusion

This study is still in progress. Results to date are reported as trend data. At this time, trend data shows a decrease in the number of attempts per patient and an increase in first attempt success rate when this device is used by staff nurses in the pediatric surgical population.

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References

- Crowley JJ. Vascular access. *Techniques in Vascular and Interventional Radiology* 2003; 6(4): 176-81.
- Cummings EA, et al. Prevalence and source of pain in pediatric inpatients. *Pain* 1996; 68(1): 25-31.
- Frey AM. Success rates for peripheral iv insertion in a children's hospital. *J Intravenous Nursing* 1998; 21(3): 160-5.
- Jacobson AF, Winslow EH. Variables influencing intravenous catheter insertion difficulty and failure: an analysis of 339 intravenous catheter insertions. *Heart and Lung* 2005; 34(5): 345-59.
- Linger RA. Pediatric peripheral iv success rates. *Pediatric Nursing* 2003; 29(5) 351-4.