

CATHETER SECUREMENT IMPACT ON PICC-RELATED CLABSI: DOES SECUREMENT EFFECT RISK?

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Introduction:

CLABSI is a large global concern that often leads to higher morbidity and mortality in hospitalized patients. Many hospitals have implemented bundles and other evidence to reduce their rates of occurrence. Seeking further reductions of risk lead to a detailed analysis on differences in care, and human factors related to this catheter care. Further reducing risk and identification of causal factors is crucial to improve quality of healthcare.

Objectives:

Can a PICC securement device provide a lower risk of PICC-related CLABSI? We decided to compare 2 different types of catheter securement options placed on all PICCs over a 4 year period, evaluating overall CLABSI rates and its relative risk. Analysis of 7,820 PICC procedures over 4 years were assessed for CLABSI diagnosis and causal factors. None of the 49 (0.63%) diagnosed CLABSIs were related to any insertion factors, processes or location. Further investigation into care processes was conducted in this quality assurance review.



Methods:

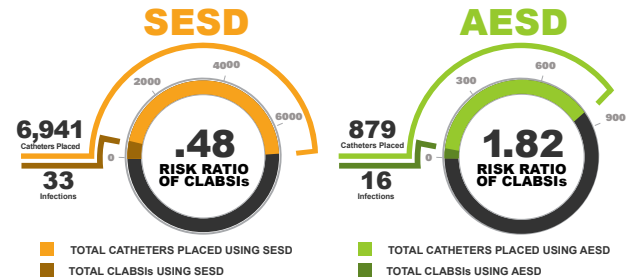
A University of Arkansas for Medical Sciences Internal Review Board submission (IRB#229047) was submitted for ethical review and was approved as a non-human subject study to perform a retrospective observational study of hospital PICC data, focusing on device-related CLABSI outcomes for the study period. A single center, 4-year, retrospective review performed at a large academic medical center with the use of a subcutaneous securement device and adhesive stabilization in 7,820 PICC procedures to establish the calculated risk and impact of catheter stabilization and securement methods to central line associated bloodstream infection (CLABSI). Data analyzed included, patient diagnosis, areas of care, insertion side arm, care processes, mucosal barrier injury, and securement type.

Disclosure of Interest:

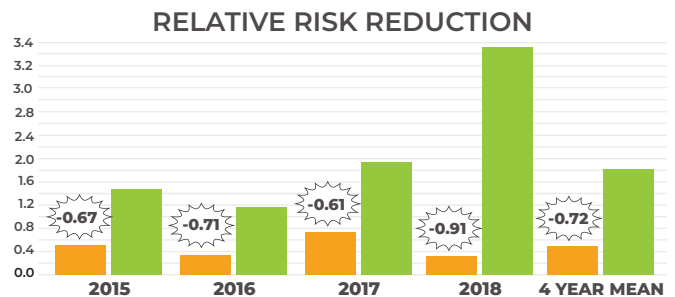
M. Rowe: Interrad Medical, Inc., Smiths Medical, Inc.

TR. Spencer: Teleflex Inc., FujiFilm SonoSite Inc., Interrad Medical, Inc.

Results:



This quality data analysis process found that a subcutaneous securement device offered a reduction of greater than 60% for central line associated bloodstream infection rates assessment over the adhesive securement devices. Risk reduction over the four years consistently favors SESD, highlighting that improved catheter stability can lead to lower infection rates by reducing intravascular bacterial ingress through subcutaneous tissue when the catheter is stabilized from the point of implantation to explant without catheter movement.



Conclusion:

Related to CLABSI, the use of a subcutaneous engineered stabilization device (SESD) has consistently provided a significant lower risk of harm (60.9 – 90.9% relative risk reduction) over a 4 year review period versus the use of adhesive engineered stabilization device (AESD). This indicates that securement selection does have an impact on the prevention of CLABSI and a factor to consider when seeking to sustain low infection rates in your Central Venous Access practice.