Reduction in Central Line Occlusions and the Elimination of Heparin Flushes in Home Infusion
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Abstract

Maintaining the patency of a central line is critical to insure positive patient outcomes. Catheter occlusions are a complication in home infusion that has a significant impact on patient care. This observational study utilizes anti-reflux technology housed in a needleless connector to prevent occlusions. The study describes the reduction of occlusions by tracking thrombolytic agent use in central lines while eliminating heparin flushing during home infusion.

Objective

• Quantify the reduction in central line occlusions after implementation of anti-reflux needleless connector technology based upon the decrease in Cathflo Activase® usage (Nexus TKO®, distributed by Smiths Medical)
• Quantify the reduction in heparin usage from implementation of the Nexus TKO®
• Estimate the annual monetary savings for the organization from the reduction in occlusions, including staff time and medication costs

Methods

• Retrospectively calculated amount of Cathflo Activase® and Heparin (10U/ml and 100U/ml) used over 8 weeks for 10 compromised patients prior to using anti-reflux needleless connector
• Replaced current needleless connector MicroClave® and implemented Nexus TKO®-6 in same 10 patients, modified central line protocol to eliminate heparin flushes, and collected Cathflo Activase® usage for next 8 weeks
• Estimated facility cost savings reduction for Cathflo Activase®, heparin and nursing time per usage

Results

• 90% central line occlusions reduction from 10 to 1
• 94% Cathflo Activase® usage reduction 17 vials to 1 vial
• 100% Heparin flush elimination
• Cathflo Activase® costs were $1,532 prior to use of Nexus TKO®-6 and $102 for these patients after implementation

Conclusions

• This study demonstrated that implementing anti-reflux needleless connector technology to central lines decreases occlusion rates, Cathflo Activase® usage and provides confidence in eliminating heparin flushes in home infusion (Nexus TKO®, distributed by Smiths Medical)
• Decreased occlusion rates results in annual cost savings for both medication (>$18K) and nursing time (>$35K)
• Data collection and results validation will continue while implementing this technology for all central line patients across our services

References


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