

Eliminating Catheter Associated Urinary Tract Infections In The Trauma ICU: Two Balloons Are Better Than One

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Background

Payers have moved towards changing reimbursement to reward better outcomes and penalize worse outcomes over volume. Catheter associated urinary tract infections (CAUTIs) continue to account for most hospital-acquired infections (40%), especially in the intensive care unit (ICU). Using 'bundles' has improved the incidence of CAUTI but may not totally eliminate these infections.

There are over 600,000 cases of CAUTI, 13,000 deaths and \$400 million in uncovered charges per year in the United States.

Objectives

The bladder protects against infection with a mucosal lining that prevents bacteria from adhering to the bladder wall and forming colonies. But the Foley catheter breaks down this defense in multiple ways. A new dual balloon catheter the Duette, may prevent breakdown of bladder mucosa that leads to the evolution of CAUTI. This study compares this new technology with current technology and its ability to potentially eliminate CAUTI.

Methods

This retrospective cohort study compares a 6-month cohort of trauma ICU patients with conventional single balloon catheters to a 6-month cohort of trauma ICU patients who had dual balloon Duette catheters inserted and remained in the ICU for 5 days or longer with a urinary catheter. The number of CAUTIs were then analyzed in both cohorts to compare age, sex, ISS, organ system injured, grade of injury and microbiology. Additionally a strict implementation of a CAUTI bundle was adhered to in the second time period.

Results

From April to September 2014 a total of 199 patients were admitted to the ICU

- 107 single balloon Foley catheters inserted
- ◆ **12 CAUTIs – 11.2%**

From October 2014 to March 2015 a total 251 patients were admitted to the ICU

- 64 single balloon Foley catheters inserted
- ◆ **5 CAUTIs – 7.6%**
- 39 dual balloon Duette catheters inserted
- ◆ **1 CAUTI – 2.5%**

Conclusions

- **CAUTI rates dropped from 11.2% to 2.5% with use of new technology and bundle implementation**
- **Two balloons and a subsumed tip may act to protect bladder mucosa from erosion and infection**
- **There may be an opportunity to make CAUTI a "never event" in high acuity intensive care units**

