Reduction of catheter-related bloodstream infections rate in Medical center in Taiwan

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Background
According to nosocomial infections surveillance system statistical analysis of Centers for Disease Control(CDC) in Taiwan, Healthcare-associated infection rate is 7.54% at 2103, among them were Bloodstream infection include 76.97%, and there were 49.25% of the patients had to use the central catheter. Index statistics of Taiwan Clinical Performance Indicator also noted ICU central venous catheter-related bloodstream infection rate was 3.5‰. US ICUs every year an average of eighty thousand visitors central catheter-related bloodstream infections, not only result in increased antibiotic using, prolonged hospital stay, but also led to high mortality rate of 22.9%. Every central catheter-related bloodstream infection occurred in the case of Taiwan, for an additional cost of medical expenses about 150,000, the days of hospitalization will be extended 16 days. The average central catheter-related bloodstream infections rate in our ICU was 11.07% from January 2013 to May 2013, even reached up to 21.74% in May. Therefore, we hold up a group to decrease CRBSI rate.

Purpose
We designed a project to reduce the CRBSI rate below 4.0‰ in our intensive care unit, further enhance the quality of care of critically ill patients.

Method
Improvement plans from June 2013 to December 2014 - causes of infection included health care workers inadequate CRBSI prevention practices, dressing sterilization step was incorrect, needle puncture site was easy to oozing and implanting and dressing materials without homogenization and dispersed. Improvement plans included providing in-service education, establishing standard procedures of central venous catheter insertion and dressing, used chlorhexidine-imregnated sponges, added CVC bundle car and CVC care checklist.

Results
The CRBSI rate was decreed to 0.74‰ after implementation. This was significantly below the reduction target of 4.0‰. Even had 10 month of zero infection rate, significantly reduced catheter-related bloodstream infections in our ICU.

Conclusions
Reduce central catheter-related bloodstream infections is a major issue in hospital. We read the most relevant literature countermeasures more similar projects, so we participated in relevant seminars and joined chlorhexidine-imregnated sponges program. This project has effectively reduced CRBSI.

This experience was shared to help other hospitals and improve quality of critical care units, reduce the number of days of hospitalization and cost of medical expenses.

Reference