1 OUTCOMES OF TRACHEOSTOMY PATIENTS USING AN INTERDISCIPLINARY CARE MODEL (RETROSPECTIVE COHORT)

Hashem Alhashemi, Mohammed Algarni, Hadi Hakami, Narvanie Seebran, Mazen Alayed, Tarik Hashem, Tanvir Hussain, Abdulla Tashkandi. *Department of Medicine, College of Medicine, King Abdulaziz Medical City – Jeddah, King Saud bin Abdulaziz University for Health Sciences*

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Background There are no national data regarding outcomes of tracheostomy patients. The aim of this study was to examine the outcomes of tracheostomy inpatients at KAMC-Jeddah using an interdisciplinary care model. The objectives were to identify the proportion of tracheostomy patients with successful decannulation, estimate the time to decannulation post intensive care unit (ICU) discharge, and to identify the predictors of weaning trials failure.

Methods This study had a retrospective cohort design in which all tracheostomy patients from January 2016 until December 2018 were included. Pediatric patients and those with neck tumors obstructing the airway were excluded. Data regarding patients' demographics, comorbidities, GCS, and ICU discharge and decannulation dates were collected. Tracheostomy patients were assessed weekly during team rounds by all team members (respiratory therapist, speech clinician, ENT doctor, rehab medicine doctor, tracheostomy resource nurse).

Results The cohort included 221 patients, of whom 36 were chronic tracheostomy patients. Of the 185 patients who underwent weaning trials, 71 (38%) were successfully weaned and decannulated; the median time to decannulation post ICU discharge was 46.5 days. Predictors of weaning trials failure were number of comorbidities (odd ratio [OR] 2.635, 95% CI 1.4–5.0, $p < 0.01$), GCS score < 11 (OR 6, 95% CI 2.7–13.9, $p < 0.01$), female sex (OR 3.1, 95% CI 1.3–7.5, $p < 0.01$), and age (OR 1.04, 95% CI 1.02–1.06, $p < 0.01$). All decannulation attempts were safe and successful, and none of the 40 inpatient deaths (18%) were related to tracheostomy.

Conclusion The majority of tracheostomy patients had prolonged hospital stay. The interdisciplinary care model ensured the safety of their weaning/decannulation process and improved the quality of their hospital care.

2 SUCCESSFUL INTERVENTION TO REDUCE CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTION RATE IN ADULT INTENSIVE CARE UNIT AT A SPECIALIZED TERTIARY CARE HOSPITAL IN RIYADH, SAUDI ARABIA

Ayham Salah Albadawi, Yahya AlBakheet, Kassem Abou Yassine, Eman AlGhamdi, Angela Caswell, Saja Marhoun, Aiman El-Saed, Majid Alshamrani, Hanan Balkhy. *Infection Prevention and Control King Abdulaziz Medical City – Riyadh*

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Background Central line-associated bloodstream infection (CLABSI) surveillance in the adult intensive care unit (ICU) in King Abdullah Specialized Children Hospital showed a higher CLABSI rate during the first quarter of 2018. CLABSI is associated with a significant increase in morbidity, mortality, length of hospitalization, and the cost of healthcare. The aim of the current study was to evaluate the impact of a multifaceted improvement project aiming to reduce the rate of CLABSI.

Methods This was an interventional surveillance study. A Plan, Do, Check, Act (PDCA) quality improvement approach was used.

The intervention was initiated in March 2018. It focused on the following aspects: standardizing the central line (CL) maintenance practices, creating a designated cart for CL insertion and maintenance, increasing compliance with aseptic techniques and CL insertion and maintenance bundles, educating the healthcare workers and patients on CLABSI prevention, environmental cleaning and disinfections, and instantaneous feedback to the stakeholders about CLABSI events. The intervention engaged multiple partners including infection control, nurses, and physicians. Surveillance methods and CLABSI definition was done according to the US National Healthcare Safety Network.

Results During 2018, a total of ten CLABSI events were detected during 2919 central-line days. They included four, four, two, and no events in the first, second, third, and fourth quarters, respectively. After intervention, the rate significantly decreased from 5.2 per 1000 central line-days during the second quarter of 2018, to 3.9 during the third quarter of 2018, and zero during the fourth quarter of 2018 (Mantel-Haenszel chi-square p value of 0.034).

Conclusion A multidisciplinary multifaceted improvement project using quality improvement tools to enforce the evidence-based preventive practices has been successful in reducing the CLABSI rate. The implementation of the improvement project needs to be continued to maintain zero or low CLABSI rates.

3 MODIFIED EARLY WARNING SCORE AS A PREDICTOR FOR INTENSIVE CARE UNIT ADMISSION IN CHEMOTHERAPY-RECEIVING ONCOLOGY PATIENTS WITH POSITIVE BLOOD CULTURE

Jawad Allarakia, Taher Felemban, Amer Alghamdi, Abdullah Ashi, Ashraf Alsahafi, Mohammed Alzahrani, Abdulfatah Alamri, Mona AlDabbagh. *College of Medicine, King Saud bin Abdulaziz University for Health Sciences*

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Background Sepsis is a group of systemic manifestations resulting from an underlying infection that triggers an immune response that causes injury to the host. Chemotherapy-receiving oncology patients (CROPs) are particularly prone to sepsis; however, their suppressed immune system renders the signs of inflammation less evident. The Modified Early Warning Score (MEWS), with a cutoff value of ≥ 4 , is a tool intended to detect patients with deteriorating clinical circumstances early and to predict the need for intensive care unit (ICU) transfer. Therefore, we aimed to assess the usefulness of MEWS in predicting ICU admission and mortality in CROPs with positive blood culture.

Methods Electronic records of patients hospitalized in King Abdulaziz Medical City (KAMC), Jeddah, Saudi Arabia, from June 2016 to June 2017 were retrospectively reviewed. Adults older than 14 years with positive blood cultures were included and subdivided into two groups: CROP cases and immunocompetent controls; comparison was referenced to the actual ICU admittance. MEWS was calculated at different time intervals before, after, and at the time of positive blood culture in both groups to identify its discriminative capability. Receiver operator curves (ROC) analysis was used to determine the best cutoff MEWS at different time intervals.