



The incidence of central venous catheter-related bloodstream infection (CRBSI) for continuous renal replacement therapy (CRRT) in kidney intensive care unit (ICU) patients is worthy of particular attention and recently, we analyzed clinical characteristics and risk factors of CRBSI for CRRT in our kidney ICU patients” Cheng et al (2018).

Abstract:

BACKGROUND: The incidence of central venous catheter-related bloodstream infection (CRBSI) for continuous renal replacement therapy (CRRT) in kidney intensive care unit (ICU) patients is worthy of particular attention and recently, we analyzed clinical characteristics and risk factors of CRBSI for CRRT in our kidney ICU patients.

METHODS: To be part of this retrospective study, 1,523 patients who had a central venous catheter (CVC) for CRRT during the period April 2010 to May 2015 in our centre were enrolled. The clinical features and pathogens of CRBSI patients were investigated. Patients who also had CRRT of kidney ICU hospitalization without CRBSI were enrolled in a 1: 2 ratio as control. Risk factors of the CRBSI were analyzed.

RESULTS: A total of 57 patients had central venous CRBSI. The incidence of the infection was 3.7%. The mean rate of CRBSI was 3.9 per 1,000 catheter days, and the catheter median

indwelling time was 14 (7-30) days. The most common pathogens were Gram-positive bacteria, which were noted in 29 cases (50.9%), followed by Gram-negative bacteria (36.8%). The most common pathogens causing CRBSI were *Staphylococcus aureus* (10 cases) and *sewer enterobacteriaceae* (10 cases) followed by *Staphylococcus epidermidis* (9 cases). CVC insertion sites included internal jugular vein (33 cases) and femoral vein (24 cases), accounting for 2.9% of internal jugular vein catheterization (1,140 cases) and 6.3% of femoral vein catheterization (383 cases) respectively. In total, 16, 20, 7 and 14 cases of CRBSI were noted in Spring, Summer, Autumn and Winter, accounting for 28.1, 35.1, 12.3 and 24.6% respectively. The most common infectious manifestations were chills (68.4%), fever (100%), and septic shock (49.1%). Multivariate analysis showed that catheterization of the femoral vein, long catheter indwelling time, low CD4+ lymphocytes and high acute physiology and chronic health evaluation (APACHE) II scores were independent factors associated with CRBSI.

CONCLUSIONS: The incidence of CRBSI in our kidney ICU was 3.7%. Central venous CRBSI for CRRT was associated with catheterization of the femoral vein, long catheter indwelling time, compromised immune function and high APACHE II scores. Understanding pathogens and risk factors for central venous CRBSI in kidney ICU can help doctors prevent and treat CRBSI earlier.

You may also be interested in...

Risk factors for CLABSI in adult hematopoietic cell transplant patients

Risk factors associated with non-mucosal barrier injury CLABSI

CLABSI rates associated with hemodialysis patients

Reference:

Cheng, S., Xu, S., Guo, J., He, Q., Li, A., Huang, L., Liu, Z. and Li, S. (2018) Risk Factors of Central Venous Catheter-Related Bloodstream Infection for Continuous Renal Replacement Therapy in Kidney Intensive Care Unit Patients. *Blood Purification*. November 28th. .



doi: 10.1159/000495024.

