Category : **Polytrauma**

A28 - *Validation of the augmented renal clearance in trauma intensive care (arctic) scoring system for augmented renal clearance prediction in a trauma subgroup of a mixed icu population*

M Perreault [1] ; K Archambault [2] ; E Bing [2] ; YT Fang [2] ; C Jabamikos [2] ; KD Nguyen [2] ; A Sananikone [2] ; MA Duceppe [2] ; A Marsot [3] ; M Chagnon [4]

[1]*The Montreal General Hospital, Pharmacy Suite C1-200, Montreal , Canada,* [2]*The McGill University Health Center, Dept of Pharmacy, Montreal, Canada,* [3]*Université de Montreal, Faculté de Pharmacie, Montreal, Canada,* [4]*Université de Montreal, Service de Consultation statistique, Montreal, Canada*

Introduction:

Augmented renal clearance (ARC) is prevalent in trauma patients and leads to subtherapeutic levels of renally eliminated medications with potentially unfavorable clinical outcomes. The Augmented Renal Clearance of Trauma in Intensive Care (ARCTIC) score has been developed to predict ARC in critically ill trauma patients. Our primary objective was to validate this score among the trauma subgroup of a mixed intensive care patient cohort.

Methods:

This single-center, retrospective, observational cohort study assessed ARC using a timed 24-hour urine collection performed weekly. ARC was defined as a measured creatinine clearance of ≥ 130 ml/min/1.73m2. ARCTIC score performance was evaluated through an analysis of sensitivities and specificities and examination of receiver operator characteristic curves for the trauma subgroup, the medical/surgical subgroup and the pooled cohort.

Results:

ARC was observed in 33.9% (n = 58) of trauma patients (n = 171) and 15.7% (n = 24) of medical/surgical patients (n = 153). Examination of different cutoffs for the ARCTIC score in our trauma population confirmed that the optimal cutoff score was ≥ 6. Comparison between ROC curves for ARCTIC score and for regression model based upon our data in trauma patients indicated validation of the score in this subgroup. Comparison of sensitivities and specificities for ARCTIC score between trauma (93.1 % and 41.6%, respectively) and medical/surgical subjects (87.5 % and 49.6 %, respectively) showed no clinical nor statistical difference, suggesting validation for the medical/surgical subgroup as well.

Conclusion:

In our mixed ICU population, the ARCTIC score was validated in the trauma subgroup. In addition, the ARCTIC score performed well in the surgical/medical population. Future studies should assess the performance of the ARCTIC score prospectively.