

eP101

ePoster Viewing

Sepsis, bloodstream and graft infections: *Staphylococcus aureus* and others

**LACK OF CORRELATION OF STAPHYLOCOCCUS AUREUS SEPSIS CLINICAL PARAMETERS OF SEVERITY OF ILLNESS AND MOLECULAR STRAIN TYPING**

J. Zhang<sup>1</sup>, K. Wu<sup>1</sup>, J. McClure<sup>1</sup>, K. Zhang<sup>2</sup>, J. Conly<sup>3</sup>

<sup>1</sup>Centre for Antimicrobial Resistance, University of Calgary and Alberta Health Services, Calgary, Canada ; <sup>2</sup>Pathology and Laboratory Medicine. Microbiology Immunology and Infectious Diseases Centre for Antimicrobial Resistance Synder Institute for Chronic Diseases, University of Calgary and Alberta Health Services, Calgary, Canada ; <sup>3</sup>Medicine Microbiology Immunology and Infectious Diseases Centre for Antimicrobial Resistance Synder Institute for Chronic Diseases, University of Calgary and Alberta Health Services, Calgary, Canada

**Objective:** *Staphylococcus aureus* infection is a frequent cause of sepsis in humans and may be associated with high mortality without prompt intervention. We sought to use typing of isolates of *S. aureus* recovered from patients enrolled in the Alberta Sepsis Network (ASN) study to determine if there were correlations between clinical parameters of sepsis and isolate subtypes.

**Methods:** Between Sept 2009 and Aug 2012, 30 invasive sterile site isolates of *S. aureus* were recovered from severe sepsis cases within +/- 96 hours of enrolment in the ASN study in the intensive care unit. Molecular categorization of isolates was done using SCC*mec* typing, PFGE, *spa* typing and MLST. To date, clinical data including maximum SOFA score and mean admitting APACHE II score were available from 20 episodes of severe sepsis with matched *S. aureus* isolates within the designated time frame. We sought to analyze the correlations between the strain molecular typing with the clinical parameters of sepsis.

**Results:** Among the 20 isolates, 5 were MRSA ST8 (USA300 pulsotype), 1 was MRSA ST5, 5 were MSSA ST30, 3 were MSSA ST45, 2 were MSSA ST59 and the remainder were MSSA singleton STs. For the MRSA ST8, MSSA ST45 and MSSA ST30 sepsis patients, the mean admitting APACHE II scores were 18.2, 10.7 and 19.4 and the maximum mean SOFA scores were 12.4, 14 and 8.8 respectively. The highest admitting APACHE II scores and maximum SOFA scores were associated with strains of MRSA ST5 and two unrelated MSSA strains ST789 and ST1. There was no association with *spa* types and the clinical parameters. The mean admitting APACHE II score and mean maximum SOFA scores had a correlation coefficient of 0.363 for all patients.

**Conclusions:** Our preliminary results suggest that the subtypes of *S. aureus* strains do not correlate with sepsis severity based on the clinical parameters of admitting APACHE II and mean maximum SOFA scores. Other host related parameters or strain virulence or both may play a more significant role than the subtypes for *S. aureus* sepsis.