# 981: Evaluation of Burn Sepsis Automated Alerts in an Intensive Care Unit

**Authors:** Mann-Salinas E., Caldwell N., Serio-Melvin M., Luellen D., Chung K., Cancio L., Salinas J.,

**Performing Organization:** United States Army Institute of Surgical Research, JBSA Fort Sam Houston, TX

**DISTRIBUTION/AVAILABILITY STATEMENT**

Approved for public release, distribution unlimited

**Supplementary Notes**

1. **REPORT DATE**
   01 DEC 2014

2. **REPORT TYPE**
   N/A

3. **DATES COVERED**
   -

4. **TITLE AND SUBTITLE**
   981: Evaluation of Burn Sepsis Automated Alerts in an Intensive Care Unit

5a. **CONTRACT NUMBER**
5b. **GRANT NUMBER**
5c. **PROGRAM ELEMENT NUMBER**
5d. **PROJECT NUMBER**
5e. **TASK NUMBER**
5f. **WORK UNIT NUMBER**

6. **AUTHOR(S)**
   Mann-Salinas E., Caldwell N., Serio-Melvin M., Luellen D., Chung K., Cancio L., Salinas J.,

7. **PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**
   United States Army Institute of Surgical Research, JBSA Fort Sam Houston, TX

8. **PERFORMING ORGANIZATION REPORT NUMBER**

9. **SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)**

10. **SPONSOR/MONITOR’S ACRONYM(S)**

11. **SPONSOR/MONITOR’S REPORT NUMBER(S)**

12. **DISTRIBUTION/AVAILABILITY STATEMENT**
    Approved for public release, distribution unlimited

13. **SUPPLEMENTARY NOTES**

14. **ABSTRACT**

15. **SUBJECT TERMS**

16. **SECURITY CLASSIFICATION OF:**
    a. **REPORT**
    unclassified

    b. **ABSTRACT**
    unclassified

    c. **THIS PAGE**
    unclassified

17. **LIMITATION OF ABSTRACT**
    UU

18. **NUMBER OF PAGES**
    1

19. **NAME OF RESPONSIBLE PERSON**

**Standard Form 298 (Rev. 8-98)**

Prescribed by ANSI Std Z39-18
SHOCK INDEX AS A PREDICTOR OF OUTCOMES IN PATIENTS WITH SEPTIC SHOCK

Isaac Biney, Alem Mehari; 1Howard University Hospital, Washington, DC

Learning Objectives: Severe sepsis and septic shock are major causes of death in hospitals across the United States. The shock index (SI), calculated as heart rate divided by systolic blood pressure, has been studied as a risk stratifying tool in patients presenting to the emergency department with severe sepsis and has been shown to predict disease escalation. However, it has not been studied in intensive care unit (ICU) patients. In this study, we evaluated if a sustained SI can be used to predict outcomes in patients admitted to the ICU with septic shock who had been initially successfully resuscitated. Methods: Patients admitted to the ICU with severe sepsis or septic shock requiring vasopressor support within 48 hours and associated were retrospectively identified. The shock index was calculated for each set of vital signs from the time of withdrawal of vasopressor support for a total of 96 hours or until an outcome measure was met. Results: A total of 46 patients were identified with mean age of 61 ± 13 years. Fifty-two percent were male and 80% were African Americans. Sustained SI elevation was present in 20 (63%) patients. These patients had 18 (39%) ICU deaths. ICU mortality was significantly higher in those with sustained SI elevation: 15 (52%) compared to 3 (18%) without a sustained SI elevation (p=0.022). Patients with sustained SI elevation had significantly higher lactate levels (3.3 ± 2.3 vs 1.9 ± 1.3; p=0.034). There was no difference in the MPM II score between the 2 groups (62.3 ± 26.1 vs 63.0 ± 20.4; p=0.711). ICU length of stay was 16 ± 11 days in the sustained SI elevation group compared to 10 ± 9 in the non-sustained group (p=0.034). Conclusions: Our findings indicate a sustained SI elevation was associated with worse outcomes in ICU patients who were initially successfully resuscitated for septic shock. Further studies with larger sample sizes are needed to confirm these findings in order to determine whether the SI can be used to risk stratify patients in the ICU.

PRACTICES AND PERCEPTIONS OF ED AND ICU RNs REGARDING INITIAL IV ANTIMICROBIAL THERAPY FOR SEPTIC SHOCK

Russel Roberts, 1Abdullah Alhammadi, 2Lindsay Crossley, 3Erik Anketell, 1Lee-Ann Wood, 1Greg Schumaker, 1Erik Garpestad, 1John Devlin; 1Tufts Medical Center, Boston, MA, 2Northeastern University, Boston, MA

Learning Objectives: The rapidity by which adequate IV antibiotic (ABX) therapy is initiated in septic shock (SS) affects mortality. While nurses (RN) can influence the speed by which IV ABX are initiated in SS, their practices and perceptions surrounding ABX timing and sequencing remains unclear. Methods: A validated and anonymous written survey was distributed to 115 full-time RNs. This project attempted to describe VEGF at the time of SS diagnosis (ENR), at 72 hrs (T72) and 7 days (D7) after SS onset and the influence of steroid treatment on VEGF levels. Methods: We prospectively analyzed data of 141 vasopressor dependent VPSS pt admitted to medical and surgical intensive care units (ICU) who received a complete cosyntropin stimulation test (CST) after volume resuscitation (Oct 2010-Jun 2013). Steroid use was determined by the treating clinician's discretion. VEGF levels were measured at enrollment, 72hrs and 7days by SS onset and the influence of steroid treatment on VEGF levels. Conclusions: Data was grouped according to maximal Cortisol peak (30 μg/dL) after the CST. Patients who had Cortisol peaks (CoP)>30 had similar VEGF levels at ENR for patients later treated or not treated with steroids (284.8 vs 292.0 μg/mL, howev- er the patients treated with steroids showed a trend for decreasing VEGF levels at T72 (265.6 vs 370.8 μg/mL), with significant decreases in VEGF levels at D7 (327.8 vs 564.4 μg/mL, p=0.001). Similar trends for VEGF were observed of patients with CoP≤30 when treated with steroids: ENR: 385.2 vs 342.0 μg/mL; T72: 381.1 vs 359.7 μg/mL; D7: 275.7 vs 639.5 μg/mL. Conclusions: Al SI pts may benefit from steroid treatment based on the fact that the marker of vascular leakage such as VEGF is reduced in pts who receive steroid treatment compared to not steroid treated pts.