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Background. Animal models of serious infection suggest that 24 hours of induced hypothermia improves circulatory and respiratory characteristics and enhances survival, but whether therapeutic mild hypothermia in such conditions is of clinical benefit remains unknown. We, therefore, tested whether reducing core temperature to 32–34°C in critically ill patients with septic shock and ventilator-demanding respiratory failure improves survival and reduces organ dysfunction.

Methods. In this multi-national trial, patients with septic shock were enrolled within 6 hours of onset of septic shock and ventilator-demanding respiratory failure and randomized 1:1, stratified by site (target sample = 560), to routine thermal management or 24 hours of induced hypothermia (target 32–34°C) followed by 48 hours of normothermia. Other aspects of care were per routine in each participating center. The primary endpoint was 30-day all-cause mortality.

Results. At the third ordinary interim analysis, after recruitment of 432 participants, the Data and Safety Monitoring Board recommended the trial be terminated for futility; the conditional power for rejection of the null hypothesis in favor of efficacy was null. In the induced hypothermia group, target temperature was reached within median 3.2 hours [IQR: 2.2, 4.8], and maintained for 24 hours [IQR: 24, 24] (Figure 1). There was no evidence for a difference in 30-day mortality risk in patients randomized to hypothermia (96/217) vs. routine thermal management (77/215): relative risk 1.24 [95% CI: 0.98, 1.56] (Figure 2). At the end of the temperature intervention (72 hours), more patients assigned to hypothermia were in continued shock (vasoactive medication 71% vs. 58%; P = 0.01), and fewer cooled patients had inflammatory control (32% vs. 47% had CRP decline of >30%, P = 0.005). More harm from cooling was seen in patients entering the trial with normal renal function and with normal platelet count (P for interaction < 0.05).

Conclusion. Among patients with septic shock and ventilator-demanding respiratory failure, induced hypothermia did not improve survival, but adversely affected the duration of shock, and inflammatory control. Induced hypothermia should not routinely be used in patients with septic shock.

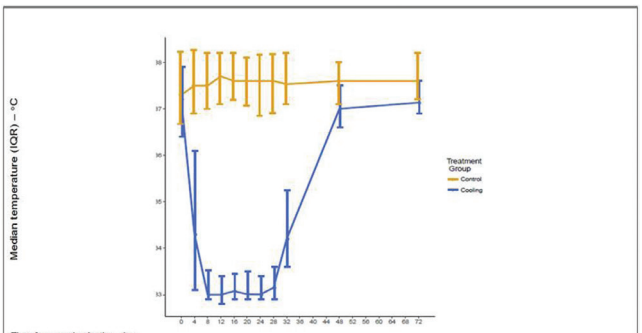

Figure 1. Median temperature the first 72 hours after randomization.

There was a significant difference in median temperature at all time points except baseline (Mann-Whitney U test, cooling vs. control).

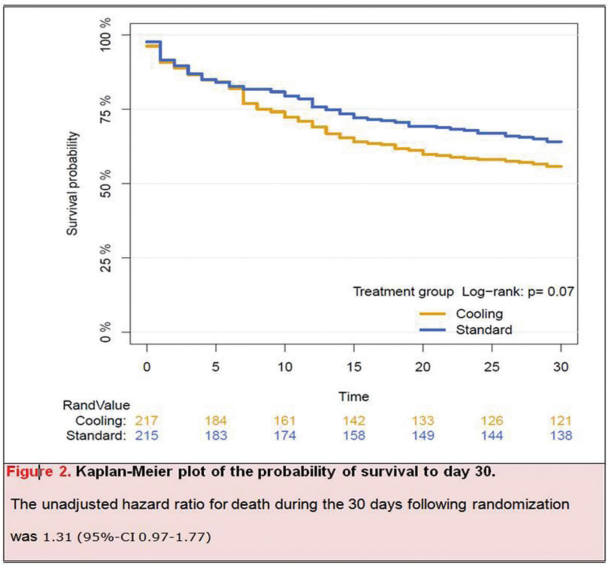

Figure 2. Kaplan-Meier plot of the probability of survival to day 30.

The unadjusted hazard ratio for death during the 30 days following randomization was 1.31 (95%-CI 0.97-1.77)

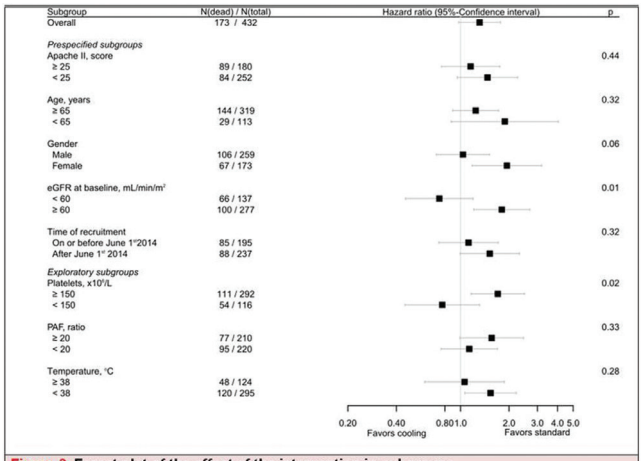

Figure 3. Forest plot of the effect of the intervention in subgroups

P values are interaction between treatment effect and subgroup. A test for interaction between site and intervention had a p value 0.41 (not shown).

Disclosures. **All authors:** ***No reported disclosures.***

985. The Emperor's New Clothes: Prospective Observational Evaluation of the Association between the Day 2 Vancomycin Exposure and Failure Rates among Adult Hospitalized Patients with MRSA Bloodstream Infections (PROVIDE)

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Background. Current guidelines recommend vancomycin (VAN) dosing to achieve AUC/MIC ratio ≥400 for patients (pts) with serious MRSA bloodstream infections (BSI), but supporting data were largely derived in single center retrospective studies. A recent study using a Bayesian approach to estimate the VAN AUC found that patients with MRSA BSI who had an AUC_{DAY2}/MIC_{BMD} ≥ 650 or an AUC_{DAY2}/MIC_{ETEST} ≥ 320 had lower incidences of failure (*Clin Infect Dis* 59:666, 2014). This study prospectively evaluated if these VAN AUC_{DAY2}/MIC targets were associated with lower incidences of failure (PROVIDE, Award number UM1AI104681, Antibacterial Resistance Leadership Group).

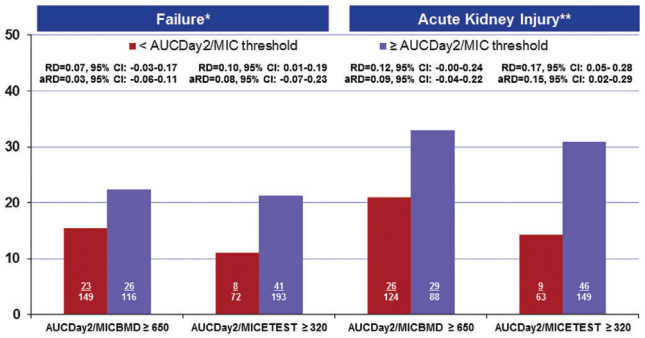
Methods. Prospective, multi-center (n = 14), observational study (2014–2106) of hospitalized adults with confirmed MRSA BSI treated with VAN ≥ 72 h. Exclusion: (1) neutropenia; (2) cystic fibrosis; (3) renal replacement therapy; (4) APACHE-II score > 25; (5) previous MRSA BSI within 60 days. VAN exposures were estimated using maximum a posteriori probability procedure in ADAPT 5. MIC_{BMD} and MIC_{ETEST} were performed at a central laboratory. Outcomes: failure (30-day mortality or MRSA BSI ≥ 7 days); acute kidney injury (AKI), ≥1.5 × increase in serum creatinine (S_{cr}) among patients with a baseline S_{CR} < 2.0 mg/dl. The study was powered at 80% to detect a 17.5% difference in failure between AUC_{DAY2}/MIC groups.

Results. Among the 265 evaluable patients, mean (SD) age was 61 (17) and APACHE-II was 12 (6). Endocarditis was definite/possible in 29%. The $MIC_{50/90}$ by

BMD and ETEST were 1/1 and 1.5/1.5 mg/l, respectively. Failure occurred in 18%; 26% had AKI. Mean (SD) VAN duration was 18 (14) days. Mean (SD) AUC_{DAY2} was 586.9 (235.5) and 44% and 73% of patients achieved an $AUC_{DAY2}/MIC_{BMD} \geq 650$ and $AUC_{DAY2}/MIC_{ETEST} \geq 320$. In the multivariate analyses (Figure 1), failure was not significantly different between AUC_{DAY2}/MIC groups. In contrast, AKI was significantly more common in patients with an $AUC_{DAY2}/MIC_{ETEST} >= 320$.

Conclusion. Achievement of higher VAN AUC_{DAY2}/MIC exposures for patients with MRSA BSIs were not associated with better outcomes and were found to result in increased AKI. Clinicians should assess the benefits vs. risks of using VAN regimens that confer high AUC_{DAY2}/MIC exposures for patients with MRSA BSIs.

Figure 1. Comparisons of Outcomes between AUC_{DAY2}/MIC Exposure Groups



Abbreviations: AUC: area under the curve; MIC: minimum inhibitory concentration; RD: risk difference; aRD: adjusted risk difference; BMD: broth microdilution.

*All variables associated with failure at P ≤ 0.1 and considered at model entry included: prior receipt of vancomycin, type of MRSA infection (community vs. hospital/healthcare), "other" source of infection, pre-existing valvular heart disease, heart failure, APACHE, age, creatinine clearance at baseline, infective endocarditis, and presence of prosthetic material.
**Patients with Baseline Serum Creatinine (< 2.0 mg/dL). All variables associated with acute kidney injury at P ≤ 0.1 and considered at model entry included: race, prior surgery, urinary source, prior hospital length of stay, creatinine clearance baseline, and prior vancomycin.

Disclosures. **T. P. Lodise Jr.**, allergan: Consultant, Grant Investigator, Scientific Advisor and Speaker's Bureau, Consulting fee and Speaker honorarium; medicines company: Consultant, Grant Investigator, Scientific Advisor and Speaker's Bureau, Consulting fee, Research support and Speaker honorarium; melinta: Consultant, Consulting fee; motif: Consultant and Scientific Advisor, Consulting fee; paratek: Consultant and Scientific Advisor, Consulting fee; nabriva: Consultant, Consulting fee; **M. J. Zervos**, Merck, Inc.: Investigator, Research grant; **M. Scheetz**, Bayer: Scientific Advisor, Consulting fee; **V. Fowler Jr.**, Pfizer, Novartis, Galderma, Novadigm, Durata, Debiopharm, Genentech, Achaogen, Affinium, Medicines Co., Cerexa, Tetraphase, Trius, MedImmune, Bayer, Theravance, Cubist, Basilea, Affinergy, Janssen, xBiotech, Contrafect: Consultant, Consulting fee; NIH, Basilea, MedImmune, Cerexa/Forest/Actavis/Allergan, Pfizer, Advanced Liquid Logics, Theravance, Novartis, Cubist/Merck; Medical Biosurfaces; Locus; Affinergy; Contrafect; Karius: Grant Investigator, Research grant; Green Cross, Cubist, Cerexa, Durata, Theravance; Debiopharm: Consultant, Consulting fee; UpToDate: author on several chapters, Royalties

986. Comparing the Outcomes of Adults with *Enterobacteriaceae* Bacteremia Receiving Short-Course vs Prolonged-Course Antibiotic Therapy

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Background. The recommended duration of antibiotic treatment for *Enterobacteriaceae* bacteremia is between 7 and 14 days. We compared the clinical outcomes of patients receiving short-course (6–10 days) vs prolonged-course (11–15 days) antibiotic therapy for *Enterobacteriaceae* bacteremia.

Methods. A retrospective cohort study was conducted at The Johns Hopkins Hospital, The University of Maryland Medical Center, and The Hospital of the University of Pennsylvania including patients with monomicrobial *Enterobacteriaceae* bacteremia treated with *in vitro* active antibiotic therapy in the range of 6–15 days between 2008 and 2014. 1:1 nearest neighbor propensity score matching without replacement was performed, prior to regression analysis, to estimate the risk of all-cause mortality within 30 days after the end of antibiotic treatment for patients receiving short vs. prolonged durations of antibiotic therapy. Secondary outcomes included *Clostridium difficile* infection (CDI) and the emergence of multidrug-resistant Gram-negative (MDRGN) bacteria within 30 days after the end of antibiotic therapy.

Results. A total of 1,769 patients met eligibility criteria. There were 385 matched pairs who were well-balanced on baseline characteristics. The median duration of therapy in the short-course group and prolonged-course group was 8 days (interquartile range (IQR) 7–9 days) and 15 days (IQR 13–15 days), respectively. No difference in all-cause mortality between short- and prolonged-course treatment groups was observed (adjusted hazard ratio [aHR] 1.00; 95% CI 0.62–1.63). Rates of CDI were similar between the treatment groups (OR 1.17; 95% CI 0.39–3.51). There was a non-significant protective effect of short-course antibiotic therapy on the emergence of MDRGN bacteria (OR 0.59; 95% CI 0.32–1.09 $P = 0.09$).

Conclusion. Short courses of antibiotic therapy yields similar clinical outcomes to prolonged courses of antibiotic therapy for *Enterobacteriaceae* bacteremia, and may protect against subsequent MDRGN emergence.

Disclosures. **All authors:** No reported disclosures.

987. Infectious Disease Consultation Is Associated with Decreased Mortality with *Enterococcal* Bloodstream Infections

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Background. *Enterococcal* bloodstream infections (EBSI) have been attributed with significant morbidity and mortality. The objective of this study was to determine whether IDC is associated with improved mortality in patients hospitalized with EBSI.

Methods. This is a cross-sectional study of patients admitted to the University of Alabama Health System between January 1, 2015 and June 30, 2016 who had EBSI. Patients who died within 2 days of hospitalization were excluded. Categorical variables were analyzed with chi-square or Fisher's exact test and continuous variables were analyzed with a *t*-test or Wilcoxon rank-sums test when appropriate. A *P*-value < 0.05 was considered significant. Logistic regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CI) for factors associated with 30-day in-hospital mortality.

Results. A total of 213 patients met the case definition. One hundred and thirty-four (63%) received IDC. Baseline patient demographics and comorbidities were similar in both groups. Patients with IDC were more likely to have repeated blood cultures (99% vs. 72%, $P < 0.001$), echocardiogram performed (77% vs. 46%, $P < 0.001$), and interventions for source control (19% vs 6%, $P = 0.01$). Patients without IDC were more likely to have inappropriate antibiotic treatment or no antibiotics (20% vs. 0%, $P < 0.001$) as well as inappropriate duration of therapy (54% vs. 10%, $P < 0.001$). There were no differences in the rates of recurrent bacteremia or readmission within 60 days. Patients who did not receive IDC had higher 30-day in-hospital mortality (27% vs. 13%, $P = 0.02$). Having an echocardiogram (OR 2.75, 95% CI 1.36–5.55), surgical intervention (OR 3.11, 95% CI 1.07–9.05) and an IV catheter (OR 3.90, 95% CI 1.39–10.88) were associated with increased likelihood of IDC while inappropriate duration of antibiotics was associated with an 87% decreased likelihood of IDC (OR 0.13, 95% CI 0.06–0.29). The strongest association observed with 30-day mortality was inappropriate duration of antibiotics (OR 4.93, 95% CI 1.93–12.61).

Conclusion. IDC was associated with reduced 30-day in-hospital mortality in patients with EBSI. Although further investigation is warranted, the results of this study suggest that early involvement of ID specialists in EBSI may lead to better outcomes.

Disclosures. **All authors:** No reported disclosures.

988. "Big data" and Gram-negative Resistance: A Multiple Logistic Regression Model Using EMR Data to Predict Carbapenem Resistance in Patients with *Klebsiella pneumoniae* Bloodstream Infection

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Background. The timely identification of carbapenem resistance is essential in the management of patients with *Klebsiella pneumoniae* bloodstream infection (BSI). An algorithm using electronic medical record (EMR) data to quickly predict resistance could potentially help guide therapy until more definitive resistance testing results are available.

Methods. All cases of *K. pneumoniae* BSI at Mount Sinai Hospital from September 2012 through September 2016 were identified. Cases of persistent BSI or recurrent BSI