442. Risk Score for Vancomycin-Associated Acute Kidney Injury in Hospitalized Patients with Acute Bacterial Skin and Skin Structure Infections

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Background. Vancomycin (VAN) has been the standard empiric antibiotic for the treatment of hospitalized patients with acute bacterial skin and skin structure infections (ABSSSI) for decades but its use can be complicated by acute kidney injury (AKI). The substantial morbidity and mortality associated with AKI underscores the need to identify ABSSSI patients at increased risk for this complication. The objective of this study was to derive a clinical prediction model for VAN-associated AKI (VAN-AKI) in hospitalized patients with ABSSSI and at least one baseline traditional risk factor for AKI.

Methods. This was a multicenter, retrospective, case–control study between 2015 and 2018 conducted at seven academic medical centers in the USA. The population of interest was hospitalized adults with ABSSSI treated with VAN ≥72 h and initiated ≤24 h of admission. Cases consisted of patients who developed AKI according to the RIFLE criteria during VAN or ≤72 h of discontinuation. Patients who did not develop AKI served as controls. Independent predictors of VAN-AKI were identified through multivariable logistic regression. A risk score was derived using a weighted coefficient-based scoring system.

Results. A total of 284 patients (28 cases and 256 controls) were included. Independent predictors of VAN-AKI included in the score were: metastatic cancer, ICU admission at VAN initiation, alcohol abuse, ≥2 nephrotoxins, mental health disease, lower extremity ABSSSI and prior ABSSSI within 1 year. Patients with mental health disease had a variety of advanced chronic comorbidities and substance use. The median risk score in cases and controls was 9 (7, 11) and 4 (3.7) ($P < 0.001$), respectively. The risk score area under the receiver operator curve was 0.803 (95% CI 0.712, 0.894). The sensitivity, specificity, positive predictive value and negative predictive value of the risk score using a threshold of 5 points was 89.29% (95% CI 70.63%, 97.19%), 51.56% (42.27%, 57.81%), 16.78% (11.35%, 23.97%) and 97.78% (93.14%, 99.42%), respectively.

Conclusion. The risk score developed in this study provides a standardized, evidenced-based approach to identify hospitalized patients with ABSSSI at higher risk for VAN-AKI. External validation is required before widespread use.

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

443. The CHROME Study, a Real-World Experiential Registry of the Use of Oritavancin for Treatment of Gram-Positive Infections

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Background. Oritavancin (ORI) is a long-acting lipoglycopeptide antibiotic indicated for the treatment of adult patients with acute bacterial skin and skin structure infections (ABSSSI) caused or suspected to be caused by susceptible Gram-positive (GP) pathogens.

Methods. Data collected from a retrospective observational registry program (2014–2017), Clinical and Historic Registry and Orbactiv Medical Evaluation (CHROME), describe the utilization, outcomes, and adverse events (AEs) associated with ORI in 440 patients treated at 26 US sites.

Results. Mean (SD) age was 58 (16) years; 37% of patients were = 65 years old (range, 18–98). Mean (SD) BMI was 32.8 (9.0) (range, 14–65). At least 1 co-morbidity was observed in 85% of patients. Patients were treated for cellulitis (61%), wound infection (15%) or abscess (15%); 32 patients received ORI to treat other infections, such as bone and joint. Ten patients received single-dose ORI for completion of osteomyelitis therapy. Of recovered GP isolates, MRSA was the most common (46%). Infusion of ORI was mostly in infusion center settings (72%). Clinical success was 88% in the single-dose group (387 patients) and 86% in the multi-dose group (51 patients). A cohort of 32 patients received 2 to 10 ORI doses separated by no more than 14 days for complicated GP infections. Clinical success was observed in 30 of 32 patients (94%), including 10 of 11 (91%) patients with bone and joint infections and 7 of 8 (88%) patients with osteomyelitis. AEs were observed for 29 of 440 (6.6%) of patients; there was a single serious AE. Six (1.4%) patients discontinued ORI infusions due to an AE.

Conclusion. The CHROME program confirms that ORI is an effective and well-tolerated long-acting lipoglycopeptide antibiotic for the treatment of a range of Gram-positive infections.

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

444. Better Efficiency, Same Accuracy: Point-of-Care PCR for the Detection of Group A *streptococcus* in Noninvasive Skin Infections

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Background. Group A *streptococcus* (GAS) is a common cause of skin and soft-tissue infections (SSTIs). Current diagnostic techniques are culture-based and time intensive, requiring the prescription of empiric antibiotics before results are available. New detection tools are needed to hasten the diagnosis and appropriate treatment of SSTIs. The Cobas® Liat® System is a point of care (POC), real-time PCR system developed by Roche Molecular Diagnostics and is used in the United States and Europe to detect GAS from throat swabs within 15 minutes. We evaluated the feasibility and performance characteristics of POC for the detection of GAS in non-severe SSTIs.

Methods. Wound swabs collected from patients presenting to the Whiteriver Indian Health Service Hospital with non-severe SSTIs requiring only outpatient treatment were eligible for inclusion. Two swabs were collected: one swab was cultured on sheep's blood agar, and the other swab was tested using POC. Compared with culture, we determined the sensitivity (SN), specificity (SP), positive predictive value (PPV), and negative predictive value (NPV) for POC to detect GAS in wound samples. We performed chart reviews 30-days from eligibility to assess the potential impact of POC systems on antibiotic use and healthcare utilization for SSTIs.

Results. To date, we have tested 100 (25%) of our target 400 samples (enrollment will be complete in August 2019). Of the 100 samples, 50 (50%) tested positive for GAS by POC, all of which were culture positive for GAS, 49 tested negative by POC (2 after a first invalid result), all of which tested culture negative for GAS (table), and 1 had an invalid POC result even after repeat testing (culture positive for MRSA only) and was excluded from further analysis. Among samples with a valid POC result, POC SN was 100%, SP was 100%, PPV was 100%, and NPV was 100%. The most common mono-infections were MRSA (22%), GAS (18%), and CoNS (6%). Among GAS cases, MSSA (32%) and MRSA (18%) co-infection was common.

Conclusion. POC PCR is highly sensitive and specific for the detection of GAS in non-severe SSTIs. To our knowledge, this is the first prospective study to use this technology for wound samples. POC PCR methods have the potential to accelerate identification of SSTI pathogens and improve antibiotic prescribing.

Table 1: Performance of POC PCR versus traditional culture

		Culture Result for GAS	
		(+)	(-)
POC Result for GAS	(+)	50	0
	(-)	0	49

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

445. A Case of Disseminated Microsporidia Manifesting as Skin Lesions in a Patient with Acute Lymphoblastic Leukemia

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Session: 51. Soft Tissue and Skin Infections
Thursday, October 3, 2019: 12:15 PM

Background. We present a case of a 65-year-old male with a history of acute B-cell lymphoblastic leukemia (ALL) who presented with fevers and skin lesions. The patient achieved remission after induction chemotherapy. Nineteen months after diagnosis, while on maintenance therapy, the patient presented as noted above. He was instructed to hold maintenance therapy and sent to the hospital.

Methods.

Results. On examination, the patient was febrile. He had papules present on the forehead, chest, arms, legs, and back. Physical examination was otherwise unremarkable. Labs were notable for a white blood cell count of 3600/uL (absolute neutrophil 3100/uL) and creatine kinase (CK) of 593 U/L. Blood and urine cultures, Histoplasma, Varicella, Toxoplasma, HIV, and an acute hepatitis panel were negative. CT of the chest, abdomen, and pelvis was unremarkable. He was empirically started on micafungin