1078. Use of a Precision Antibiotic Therapy (PAT) Prediction Model to Identify Multidrug-Resistant (MDR) Enterobacteriaceae
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Background. Emergence of multidrug-resistant (MDR) Enterobacteriaceae complicates the selection of empiric antibiotic therapy. Software called Precision Antibiotic Therapy (PAT) (Teqqa, LLC; Jackson, WY) operationalizes a predictive model using patient factors to make real-time, personalized predictions of antibiotic susceptibility for each antibiotic, allowing prescribers to choose empiric therapy for patients at risk for resistant infections. The purpose of this study was to determine the performance of PAT software in identifying MDR Enterobacteriaceae bloodstream infections (BSI) as well as to determine optimal thresholds of predicted antibiotic susceptibility to choose a broader-spectrum antibiotic.

Methods. We conducted a retrospective cohort study including 475 unique patients with BSIs caused by Enterobacteriaceae from January 1, 2016 through December 31, 2016. First-line antibiotic therapy for BSI was defined as ceftazidime piperacillin-tazobactam, levofloxacin, or aztreonam. Susceptibilities predicted by PAT were compared with known susceptibilities determined by routine laboratory testing. PAT thresholds for broadening antibiotics were assessed when predicted susceptibilities were 80%, 85%, 90%, and 95% using receiver-operator characteristic (ROC) curves. Performance characteristics were calculated for each threshold. Brier score calculations were then used to compare the accuracy of PAT predictions using the optimized predicted susceptibility threshold, to that of aggregate institutional susceptibility data.

Results. ROC curve analysis demonstrated an area under the curve of 0.82 for the 95% threshold. The sensitivity for the PAT prediction utilizing the 95% threshold was 91.7% with a specificity of 74.3%. The Brier score for the 2016 antibiogram to determine antibiotic therapy was 0.085, whereas the Brier score using PAT software was 0.071, representing a 16% improvement in accuracy.

Conclusion. PAT software demonstrated excellent capability to discriminate between Enterobacteriaceae BSIs resistant and susceptible to first-line therapy. A predicted susceptibility threshold of 95% should be used to indicate a need for escalation of empiric antibiotic therapy using PAT.

Disclosures. All authors: No reported disclosures.

1079. Joint Consultation Clinic by Infectious Diseases Specialists and Podiatry team (ID-POD) Complements the Care of Diabetic Patients with Foot Infections by Reducing Cost and Decreasing Outpatient Clinic Visits
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Background. Management of diabetic foot infections (DFI) is challenging and involves multidisciplinary teams to improve outcomes (1). Appropriate wound care of infected wounds while debridement are managed by Podiatrists (POD). When patients are hospitalized multidisciplinary teams including Vascular Surgery review patients. In the outpatient setting patients have multiple appointments including ID and Endocrinology etc. The time spent and costs incurred by patients for traveling to multiple appointments is considerable. A joint ID-POD clinic was initiated to reduce the cost and inconvenience for patients.

Methods. A joint weekly clinic was initiated in October’16 and the data was analyzed up to May’17. Finance was involved in deriving costs. The service costs for consultations payable by patients before and after the initiation of the joint clinic were compared.

Results. First 6 months experience of initiating the joint ID-POD clinic is reported. 35 unique patients had a total of 88 visits. 1/3rd of the patients had more than 2 visits to the joint clinic. For each visit to the joint clinic the patient paid 25% less compared with having separate clinics. The hospital lowered the service cost for the new clinic by 11%. This was done by minimizing the time involvement of the ID physician.

Conclusion. Joint ID-POD clinic for managing diabetic patients with foot infections revealed several advantages. Hospital outpatient visits for each patient decreased by 50% for those requiring care of both ID and POD, without compromising care. With the consolidation of each individual patient had a cost savings of 25% for the joint consultation. This joint clinic while making it convenient for patients has revealed significant cost savings to patients especially for those requiring multiple visits. We recommend hospitals with high prevalence of Diabetes and Diabetic foot infections to consider joint ID-POD clinics to reduce hassle and increase saving for patients.

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