583. Successful prevention of Strongyloides reactivation in liver transplant recipients with individualized screening and treatment: 10 year experience at a large transplant center in New York City

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Session: P-22. Care Strategies for Transplant Patients

Background: Strongyloides stercoralis is an intestinal nematode that can establish chronic, asymptomatic infection in human hosts. Following solid organ transplantation, subclinical infection may progress to hyperinfection syndrome, which is associated with high morbidity and mortality. However, the optimal approach for screening and treatment of Strongyloides in liver transplant candidates in non-endemic areas is unknown.

Methods: We performed a retrospective chart review of all liver transplant (LT) recipients from 2010–2019. All patients were evaluated by an infectious diseases physician prior to transplant, and screening for Strongyloides exposure (with Strongyloides LgG antibody) was typically limited to those with risk factors for strongyloidiasis. Only patients with positive serologic testing or other evidence of strongyloidiasis were treated with ivermectin.

Results: One thousand and seventy-two LT cases (including 15 retransplants) were reviewed. Serologic testing was performed in 664 cases, of which 36 (5.4% of those tested, 3.4% of total) were positive. Of the 36 cases with positive serologic testing, 31 had identifiable risk factors including birth place, travel or eosinophilia. Eosinophilia (defined as peripheral eosinophilia greater than 5%) was noted in 3 of the 36 recipients who had positive serology. Of the total 36 cases with positive serology, 18 were treated both pre- and post-transplant, 7 were treated only pre-transplant and 9 were treated only post-transplant. One patient died prior to initiating treatment, and one did not have documented treatment. One patient with negative serologic testing was empirically treated due to persistent eosinophilia. There was one case of Strongyloides hyperinfection due to likely donor-derived infection. There were no cases of Strongyloides reactivation in the study cohort.

Conclusion: This study demonstrates that an individualized screening and treatment protocol can effectively prevent Strongyloides reactivation in LT recipients. Given the high mortality rate of Strongyloides hyperinfection, especially in solid organ transplant recipients, a methodical assessment of epidemiologic risk is essential for appropriate risk stratification and management of Strongyloides in LT candidates.

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584. Ventricular assist device infections with Pseudomonas aeruginosa

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Session: P-22. Care Strategies for Transplant Patients

Background: Infection is a leading cause of morbidity and mortality in ventricular assist device (VAD) recipients. Pseudomonas aeruginosa (PA) is the second most common organism implicated in VAD infections, occurring in 10–50% of infections. The epidemiology of VAD recipients with PA infection is poorly described.

Methods: We identified patients (pts) at Northwestern Memorial Hospital with a VAD-specific PA infection from January 1, 2012 to December 31, 2019. VADs included the Heartmate II, Heartmate 3, and Heartware HVAD devices. VAD-specific infections were defined according to the 2013 ISHLT Guidelines.

Results: Seventeen out of 91 (18.7%) VAD infections were due to PA. Infections of the driveline exit site (DLES) occurred most commonly (n=15, 88.2%), followed by pocket (n=2, 11.8%) and pump (n=2, 11.8%) infections. Median time to infection after VAD implantation was 295 days (IQR 154 – 440 days). Of the 17 patients, 14 isolates were not fluoroquinolone (FQ) susceptible. Resistance to multiple antibiotic classes was observed in pts in whom serial cultures were obtained. Median antibiotic treatment was 107 days (IQR 55 – 183 days, maximum 775 days). Five (29.4%) pts received FQ monotherapy on initial diagnosis, 3 (17.6%) of whom required change to a different class of antibiotic. Time to and duration of FQ use were in line with published guidelines. All pts had adequate drainage and were not fluid-restricted.

Conclusion: VAD-specific infections with PA occurred late after device implantation and required prolonged antibiotic courses. Antibiotic resistance was high at diagnosis and worsened in pts on prolonged therapy. Morbidity and mortality in pts with PA VAD infections were high. The preponderance of DLES infections warrants further study and highlights the need for improvements in DLES care and infection prevention strategies.

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585. A Cost-Effective Implementation Reducing The Number Of Urine Cultures In An Acute Care Community Hospital

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Session: P-23. Clinical Practice Issues

Background: Asymptomatic bacteriuria is a common finding in hospitalized patients. This is defined as bacteriuria of ≥10^5 colony-forming units (cfu) per mL without any genitourinary signs or symptoms. Treatment for such leads to increased antimicrobial resistance and is especially common in the inpatient setting. One study showed a lack of appropriate clinical indication to order a urinalysis in more than half of the patients. In order to expedite a patient’s care, it is common to order a urinalysis and urine culture together and await the results. One study evaluated the impact of changing the order set in inpatients and yielded a 45% reduction in the urine cultures and urine culture together and await the results. One study evaluated the impact of changing the order set in inpatients and yielded a 45% reduction in the urine cultures.

Methods: Following the implementation of this initiative in October 2019, there was a decrease in overall urine culture costs. From January 1, 2019 to September 30, 2020, the cost of approximately $9484.48 and $2747.84 for the ED and inpatient, respectively. The reflex was not encouraged to be used for those who were pregnant, neutropenic, or had any evidence of immunocompromise.

Results: Following the implementation of this initiative in October 2019, there was a decrease in overall urine culture costs. From January 1, 2019 to September 2019, the cost ranged between $13428.26 to $15157.44/month in the Emergency Department. On the inpatient side, it ranged between $5141.12 to $6559.36/month. After revision of the new order set, the ED cost had dropped to as low as $5672.96/month and $3811.52/month for inpatients. This is a cost reduction of approximately $4984.48 and $2747.84 for the ED and inpatient, respectively. The total number of cultures also reduced from an average of 326/month in the ED to 193/month. The inpatient number of cultures dropped from an average of 130/month to 102/month.

Conclusion: Modifying the process of urine culture ordering has significantly cut down cost for both the hospital and patient. With clear education and modification of the electronic medical record, such interventions can dramatically improve the unnecessary testing for UTIs.

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