Implementation of Universal Screening for Strongyloidiasis Among Solid Organ and Hematopoietic Stem Cell Transplantation Candidates in a Non-endemic Area

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BACKGROUND

Strongyloidiasis can lead to hyperinfection and dissemination after transplantation with significant associated morbidity and mortality. Screening and treatment for Strongyloidiasis prior to transplantation can reduce the risk of post-transplantation disseminated infection. Targeted screening based on travel history and country of origin incompletely identifies at-risk patients. Data on universal screening prior to solid organ (SOT) or hematopoietic stem cell transplantation (HSCT) are limited. We implemented universal serology-based screening for strongyloides at our transplant center, located in a major metropolitan non-endemic area.

METHODS

We identified patients screened with serum Strongyloides IgG by semi-quantitative ELISA (ARUP Laboratories) during pre-transplant evaluation for SOT or HSCT from August 1, 2017 to April 25, 2018. We reviewed adherence to the screening recommendation by program type and the medical record of seropositive patients for country of origin, history of eosinophilia (>500 cell/µL), history of gram-negative bacteremia, ova and parasite (O&P) examination and treatment of Strongyloidiasis.

RESULTS

812 patients were evaluated for transplant during the study period: 484 (59.6%) for kidney, 152 (18.7%) for liver, 12 (1.4%) for liver/kidney transplant, 40 (4.8%) for heart, 24 (2.9%) for lung, and 100 (12.3%) for HSCT. 201 (24.7%) of the 812 patients were screened for Strongyloides: 107 (16.5%) evaluated for abdominal transplant (liver and kidney), 32 (50%) for thoracic transplant (heart and lung), and 62 (60%) for HSCT. 17 (8.4%) of 201 patients screened tested positive: 9 evaluated for kidney transplant, 4 for heart, 3 for HSCT and 1 for liver transplant. Nine of 17 patients (53%) had received ivermectin treatment or had been referred to Transplant Infectious Diseases clinic prior to our review. 10 (58.8%) seropositive patients were from USA (excluding US territories) and the majority had no documented travel to endemic regions (70%); six patients were from countries other than USA and one was from Puerto Rico. Two patients with Strongyloidiasis had eosinophilia, one had history of Klebsiella pneumoniae bacteremia and one had stool O&P examination, which was negative. Adherence to our screening recommendation was higher in transplant programs that incorporated the recommendation into an electronic order set compared to those that did not use order set (57% vs 17%).

CONCLUSIONS

- Universal screening for Strongyloidiasis identified individuals at risk of severe complications post-transplant with latent infection who did not have epidemiological or clinical findings suggestive of Strongyloidiasis.
- Adherence to screening was higher when Strongyloides serology was included in the pre-transplant evaluation electronic order set.

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