Session: 276. Transplant ID: Parasitic Infections
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Background: Pneumocystis jirovecii pneumonia is an uncommon and life-threatening disease that can occur following hematopoietic stem cell transplantation (HSCT). Trimethoprim-sulfamethoxazole (TMP-SMX) prophylaxis greatly reduces the incidence of PICP. We aim to determine what factors contribute to the development of PICP following HSCT where TMP-SMX prophylaxis is widely used.

Methods: We performed a single-center, retrospective case series of HSCT recipients from January 1, 2012 to December 31, 2018. Subjects had clinical symptoms and radiographic evidence for PICP along with at least one positive Pneumocystis test obtained from bronchoalveolar lavage (BAL) including direct fluoresce antibody (DFA), quantitative polymerase chain reaction (qPCR), cytology, and pathology.

Results: 1111 subjects underwent HSCT; of whom, 25 (2.2%) met inclusion criteria and were treated for PICP. 6 were autologous and 19 were allogeneic HSCT recipients (1.23% and 3.05% of total autologous and allogeneic HSCT, respectively). All allogeneic HSCT recipients received in vivo T-cell depletion. Median duration from autologous and allogeneic HSCT to PICP diagnosis were 138 days (range 20 to 348) and 346 days (range 41 to 771), respectively. PICP qPCR was positive in all samples tested (n = 20, range < 84 to 14900). DFA was positive in 6 (28%). Death from pneumonia occurred in 2 subjects; 11 (44%) required ICU stay, and 7 (27%) required intubation. At diagnosis, 3 subjects had relapse of underlying disease and 10 were on immunosuppression. 12 were on PJP prophylaxis (autologous HSCT 1.23% and 3.05% of total autologous and allogeneic HSCT, respectively).

Conclusions: PICP is an uncommon (2.2% of the study population) complication of HSCT while receiving PICP prophylaxis and in the absence of disease relapse, CMV reactivation, or ongoing immunosuppression. Presentation is often delayed in this population; a high degree of clinical suspicion should prompt diagnostic evaluation using a combination of laboratory tests on BAL fluid.

Disclosures. All authors: No reported disclosures.

2696. Breakthrough Toxoplasmosis While on Atovaquone Prophylaxis Following Allogeneic Hematologic Stem Cell Transplantation
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Background: The opportunistic parasite Toxoplasma causes life-threatening complications in immunocompromised hosts such as hematopoietic cell transplantation (HCT) recipients. Trimethoprim-sulfamethoxazole (TMP-SMX) is the agent of choice in preventing Pneumocystis jirovecii pneumonia and Toxoplasma, but host monocyte suppression often precludes its use. Broad-spectrum atovaquone also targets trophozoite and cyst forms, but few studies examine its efficacy in prophylaxis among this vulnerable population. We present two HCT patients experiencing breakthrough toxoplasmosis despite compliance with atovaquone prophylaxis.

Methods: Review of literature and electronic medical records.

Results: Case 1. A 68-year-old Toxoplasma seropositive woman with myelodysplastic syndrome underwent Flu-Mel-ATG-matched unrelated donor HCT. On day +68 post HCT, she presented with encephalopathy. MRI brain revealed solid and ring-enhancing lesions correlating with positive CSF T. gondii PCR. Serum DNA PCR was negative. She received 12 weeks of sulfadiazine, pyrimethamine, and leucovorin with clinical and radiological improvement. Atovaquone prophylaxis was restarted given pancyclopenia intolerance of TMP-SMX. Despite compliance, she experienced recurrent central nervous system toxoplasmosis. Her demise followed an unrelated ischemic cerebrovascular accident. Case 2. A 53-year-old Toxoplasma seropositive woman with CMV viremia and severe aplastic anemia limiting TMP-SMX use presented with pancyclopenia on day +46 after HCT. Diagnosed with graft failure, routine screening revealed positive Toxoplasma PCR while on atovaquone prophylaxis. Toxoplasma PCR became negative after preemptive therapy. She underwent a second Flu-Cy-ATG-TBI-matched related donor HCT. 2 months later, medication noncompliance led to reactivation with CMV viremia and culture-negative sepsis. Blood Toxoplasma PCR was positive at the time of death.

Conclusions: Toxoplasmosis prophylaxis failure can occur in allogeneic HCT recipients receiving atovaquone. When possible, TMP-SMX should remain first-line agent for this indication. In those unable to tolerate TMP-SMX, close clinical and Toxoplasma PCR monitoring may help identify reactivation and facilitate early initiation of therapy.

Disclosures. All authors: No reported disclosures.

2697. The Impact of Universal Deceased Donor Screening on Donor-Derived Toxoplasmosis in Solid-Organ Transplant: Report of the OPTN Ad Hoc Disease Transmission Advisory Committee (DTAC)
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Background: Donor-derived toxoplasmosis (DDT) is a severe and potentially life-threatening infection after solid-organ transplantation (SOT). Serologic testing for Toxoplasma gondii is required for all deceased donors per OPTN policy as of 4/6/17. To assess the impact of universal donor testing and the optimal approach to DDT prevention, we analyzed potential DDT cases reviewed by DTAC.

Methods: All potential Toxoplasma donor-derived transmission events adjudicated by DTAC from 2008 to 2018 were reviewed. A standardized classification algorithm was used to adjudicate each event as proven, probable, possible, unlikely, excluded or intervention without disease transmission.

Results: Twenty-eight potential DDT events were reported between 2008 and 2018. Proven or probable (p/p) DDT developed in 16 organ recipients from 15 donors. In the 9 years prior to the new testing requirement (January 2008–March 2017) 11 organ recipients from 10 donors had p/p DDT (0.13 transmissions per 1,000 donors); in the first 21 months of the new testing requirement 5 recipients from 5 donors had p/p DDT (0.27 transmissions per 1,000 donors), rate ratio 2.15; 95% CI 0.577, 6.90; P = 0.18. Toxoplasma IgG seroprevalence. Recipient pre-SOT serostatus was unknown in 4 of 5 and negative in 1 case of p/p DDT. Trimethoprim-sulfamethoxazole prophylaxis was either stopped at <3 months or not used in all 5 cases. Infection was diagnosed a median of 103 days (range 42–153) post-transplant. Four of the 5 recipients died.

Conclusion: DDT remains a morbid infection in both heart and non-heart recipients. Despite an apparent increase in DDT reporting to DTAC, it is unlikely that the actual incidence of this donor-derived event is increasing. Rather, with universal serologic screening of deceased donors and wider access to molecular diagnostics, DDT is increasingly recognized and diagnosed. To decrease risk for illness and death related to DDT, broader pre-transplant recipient serologic testing and use of prophylaxis or monitoring for high-risk serostatus recipients (Toxoplasma IgG+R−) is critical. The optimal duration of prophylaxis is uncertain at this time and warrants further study.

Disclosures. All authors: No reported disclosures.

2698. Timing of Standalone Vaccine Administration in Infants Receiving DTaP-Based Combination Vaccines
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In an attempt to provide an earlier protection against invasive pneumococcal infection, conjugated vaccines following chemotherapy is recommended for pediatric patients. **Acute Lymphoblastic Leukemia** are at high risk of invasive pneumococcal disease (IPD). Immunization with a newly licensed hexavalent vaccine, DTaP-IPV-Hib-HepB, could be useful to increase the level of seroprotection and shorten the period of susceptibility to IPD. After chemotherapy for ALL, children benefit from a PCV booster to enhance the level of seroprotection and shorten the period of susceptibility to IPD. However, PCV booster during chemotherapy could be useful to increase the level of seroprotection and shorten the period of susceptibility to IPD. After chemotherapy for ALL, children benefit from a PCV booster to enhance the level of seroprotection and shorten the period of susceptibility to IPD.