1570. Infectious Disease (ID) Complications in Immunocompromised (IC) Patients with Cancer Post-Hurricane Harvey at a Comprehensive Cancer Center in 2017

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Background. During 2017, Houston had the most destructive flood-related disaster in recent history due to Hurricane Harvey. Afterward, educational material with information of possible ID problems was provided to all healthcare workers.

Methods. Prospective surveillance of flood-related ID complications in IC cancer patients. During the 60 days post-Harvey, we monitored referrals to the ID service at MDA Cancer Center. We used the following definitions: Type of exposure: direct to flood water, direct to flooded structures, and others indirect (i.e., prophylaxis). Association risk: "Yes" (direct exposure), "No" (asymptomatic, no exposure, or infection noted prior) and "Probable" (lack of records to establish correlation). Types of infections were classified as soft tissue, gastrointestinal, respiratory, IV line associated or fever. Recommendations were noted including types of antibiotics, vaccinations, or imaging.

Results. A total of 36 cases were referred to our department. Fifty-six percent had exposure to flood water with/without exposure to structures, 33% to structures only and 11% were other (Figure 1). Regarding the association of an ID problem to flood-exposure, we found an equal distribution of 39% with an association and 39% with a probable association, and the remaining 22% with no association (Figure 2). Of the infections, the majority of infections were respiratory (42%) or soft tissue (31%) (Figure 3). There was a trend of broader antimicrobial coverage for water associated bacteria and mold infections. Only six immunizations recommendations were attained. Recommendations were noted including types of antibiotics, vaccinations, or imaging.

Conclusion. To our knowledge this is the first and largest study of ID complications in IC cancer patients following a natural disaster in medical literature. Our active surveillance showed a lower number of disaster related ID complications than anticipated, possibly because of difficulty determining exposure and underreporting of infections despite active education. Due to individual immunosuppression and exposure, there was variety of recommendations (antimicrobials, studies, or vaccinations). In the event of a weather disaster, we are developing a standard triage survey regarding type of exposure and impact, and also a process for effective immunizations.

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**Conclusion.** A longer duration of Pts is predicted to lead to higher overall costs but increased life expectancy for GMV D+/R- mismatch Ltx Pts. Ptx duration > 1 year for these patients may be economically reasonable.

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**1572. Conjugate Pneumococcal Vaccination Reduces Invasive Pneumococcal Disease Post Haemopoietic Stem Cell Transplant**

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**Background.** Immunocompromised patients, especially haemopoietic stem cell transplant (HSCT) recipients, are particularly vulnerable to invasive pneumococcal disease (IPD). However, uptake of pneumococcal vaccination tends to be lower in the immunocompromised, partly due to concerns of vaccine effectiveness. Our institution introduced protocolled 10- or 13-valent conjugate pneumococcal vaccination (PCV) to all autologous and autologous HSCT recipients in 2010 to replace routine 23-valent polysaccharide vaccine (PPV23).

**Methods.** We conducted a retrospective single-centre observational study of all HSCT recipients from 2004 to 2015 to assess the impact of PCV introduction on IPD incidence. All HSCT recipients were reviewed for microbiological evidence of IPD following HSCT. The pre-2010 group of HSCT recipients who did not receive PCV, were compared with the post-2010 group of HSCT recipients who did receive PCV. Enrollment and compliance with the post-HSCT vaccination protocol was assessed.

**Results.** Of the 917 HSCT screened for IPD, 14 episodes of IPD occurred in 12 patients between 2004 and 2016. Twelve episodes occurred in the pre-2010 group, 40% of serotypes isolated would have been covered by PCV. Two episodes occurred in the post-2010 group, neither isolate serotype was covered by PCV. There was 90% enrollment and vaccination protocol completion for surviving HSCT recipients. Overall IPD rate reduced significantly from 31.9/1,000 transplants pre-2010, to 3.7/1,000 transplants post-2010 group (P < 0.05). Specific reductions occurred in the autologous transplant group from 26.2 to 2.8/1,000 transplants (P < 0.05) and the allogeneic transplant group from 45.5 to 5.3/1,000 transplants (P < 0.05).

**Conclusion.** Introduction of PCV resulted in a significant reduction in IPD among our high-risk cohort, demonstrating clinical effectiveness of PCV in HSCT recipients and confirming immunogenicity data. To our knowledge, this is the first study to demonstrate the clinical effectiveness of PCV in this group, highlighting the importance of this vaccination in preventing infectious complications following allogeneic and autologous HSCT. The clinical effectiveness of PCV vaccine is enhanced by the importance of this vaccination to prevent infectious complications following allogeneic transplant group from 45.5 to 5.3/1,000 transplants (P < 0.05).

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**1573. Discrepancies Between Premortem and Postmortem Diagnoses of Infectious Diseases Found on Autopsy in Hematopoietic Cell Transplantation Recipients at a High-Volume Academic Transplant Center**

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**Background.** Hematopoietic cell transplantation (HCT) is a potentially curative treatment option for patients with hematologic malignancies and other diseases but carries a significant risk of infection-related morbidity and mortality. Many of these infections are difficult to diagnose and treat. It is not infrequent that HCT recipients die from infection despite extensive investigations and broad-spectrum antimicrobial therapy. Autopsy is the gold standard for establishing the cause of death but rates of performing autopsies are decreasing despite their immense value. We present the most recent case series of infectious diseases found on autopsy in HCT recipients at our high-volume academic transplant center.

**Methods.** We retrospectively reviewed the medical charts and autopsy records of 131 HCT recipients who underwent autopsy between January 1, 2000 and December 31, 2017. The premortem clinical diagnoses as documented by the clinical teams were compared with autopsy findings. Discrepancies were identified and classified according to the Goldman Criteria (NEJM 1983; 308:1000–5).

**Results.** A total of 4,072 patients received 4,395 transplants between January 1, 2000 and December 31, 2016. Of the 1,937 patients who died, 131 (7%) had an autopsy performed. Of these 131 patients, 24 (18%) patients had a total of 29 infections that were identified only postmortem: 4 (3%) patients had >1 such infection. Of these 29 infections, 15 (52%) were viral, 9 (31%) were fungal, 3 (10%) were bacterial, and 2 (7%) were parasitic: no mycobacterial infections were found. According to the Goldman Criteria, 22 (76%) had class I discrepancies (major diagnoses for which detection before death would all in probability have to lead to a change in management that might have resulted in cure or prolonged survival). Illustrative cases of each infection type will be presented to highlight the challenges of infection management in HCT.

**Conclusion.** Autopsies of HCT recipients frequently identify clinically significant infections which were not suspected pre-mortem. Our study reinforces the educational value of the autopsy, which is underutilized but can be employed to help prevent future similar infectious complications and improve patient outcomes.

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