Hospital Readmissions Among Hematopoetic Stem Cell Transplantation (HCT) Recipients

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Abstract:
Background: HCT is a highly specialized, complex, and resource-intensive procedure that requires significant post-transplant care. Although there are significant efforts to maximize graft survival, there is still a risk of complications, some of which require hospitalizations. The objectives of this study was to quantify the rate of rehospitalization post HCT, as well as to characterize the reasons for these readmissions.

Methods: Patients who received an HCT between Jan 2009 and Sept 2013 were identified in the Premier hospital database using ICD-9 codes. First HCT procedure was defined as the index event. The frequency and reasons for hospital readmission were identified during the 12 month post HCT hospitalization using discharge record documentations.

Results: Of the study population (n=4,393; mean age: 50 years) 58% were male and 91% adults. Most patients received HCT (37% allogeneic) in urban (95%), large (≥600 beds: 67%), teaching hospitals (88%). There were 157 deaths in the index HCT hospitalization that were excluded, resulting in 4,236 patients for this evaluation. Approximately 38% of these HCT recipients had a hospital readmission for any cause during the 12 months post-HCT hospitalization, with 66% occurring within the first three months post HCT hospitalization. Readmissions were most frequently related to opportunistic infections (26%), followed by graft-versus-host disease (14%), renal impairment (11%), and neutropenia (10%). Readmission of patients with high severity APR-DRG levels of 3 (22%) and 4 (19%) were the most frequent (Severity of illness level rated 1-4: minor, moderate, major, and extreme).

Conclusions: HCT recipients are at significant risk of complications during the first few months after transplant until reconstitution of immune system function. Opportunistic infection-related rehospitalizations are common and can require high intensity of care and resources. Future strategies that minimize the risks of these infections can have significant clinical and economic advantages.
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