Impact of a dedicated post-transplant vaccination service at a large Australian cancer centre

Benjamin Teh*, Trish Joyce2, Monica Slavin1, Karin Thursky1, Leon Worth3

1Peter Maccallum Cancer Centre; Infectious Diseases
2Peter Maccallum Cancer Centre; Department of Haematology
3Peter Maccallum Cancer Centre; Department of Infectious Diseases

Background: Autologous haematopoietic stem cell transplantation (ASCT) results in impaired immunity to vaccine-preventable infections. Consensus guidelines recommend vaccination commencing 6 months post-ASCT, but compliance is frequently poor, with less than one third of patients being fully vaccinated post-transplant. We evaluated the impact of a dedicated vaccination service on post-transplant vaccination uptake and compliance with prevailing national immunisation guidelines.

Material/methods: A dedicated vaccination service for ASCT recipients was established at the Peter MacCallum Cancer Centre in March 2014, consisting of regular scheduled reviews, face-to-face education with specialist nursing and medical staff and a vaccination schedule aligned with national guidelines. Prior to this service, patients were followed up and vaccinated by a nurse coordinator or self-directed through their general practitioner. ASCT patients were retrospectively classified as ‘pre-clinic’ (Sept 2012-Sept 2013) or ‘clinic’ cohorts (Oct 2013-Oct 2014), according to availability of the service. Uniform data were collated from clinical and pharmacy databases, including: type and timing of vaccine/s, total number of cycles completed, and reasons for non-compliance with guidelines. During the study period guidelines recommended vaccination for S. pneumoniae, Haemophilus influenzae type B, N. meningitidis, diphtheria-tetanus-pertussis, polio, Hepatitis B, seasonal influenza (annual) commencing 6 months (post 2013) to 12 months (pre 2013) post ASCT and measles, mumps, rubella and varicella-zoster (guided by serology 24 months post ASCT). Vaccination uptake and compliance in each cohort were compared.
Results: Clinic and pre-clinic cohorts consisted of 87 and 81 patients, respectively, with comparable patient characteristics. The proportion commencing vaccination was not significantly different between groups (Clinic vs. pre-clinic; 83.9% vs. 71.4%, \(p=0.12\)). Of 74 patients eligible for vaccination in clinic cohort, 73 patients (98.6%) commenced vaccination with only 1 patient lost to follow up (1.4%). The remainder of this cohort was not eligible due to death (n=6), disease progression (n=5) whilst 2 patients received rituximab maintenance and allogeneic stem cell transplant respectively. The rate of loss to follow up in pre-clinic cohort was 6.3%. Of patients commencing vaccination, the proportion administered according to prevailing national guidelines (timing) was significantly higher in the clinic cohort (70.8% vs. 19.0%, \(p<0.01\)). More patients in this cohort completed all recommended vaccines (47.2% vs 32.8%, \(p=0.11\)).

Conclusions: Near complete post-transplant vaccination coverage for ASCT patients can be achieved through a dedicated vaccination service. Implementing a dedicated post-ASCT vaccination service increased compliance with national immunisation guidelines (vaccination uptake, timing of administration, completion of schedule).