HSCT for Haemophagocytic Lymphohistiocytosis

Dr Theresa Cole
Paediatric Immunologist Allergist
Department of Allergy & Immunology
The Royal Children's Hospital Melbourne

Haemophagocytic lymphohistiocytosis (HLH) is a clinical syndrome characterised by multi-system inflammation that typically presents with fever, hepatosplenomegaly and cytopenias. HLH can occur in patients due to inherited defects in NK cell or cytotoxic T cell function (primary HLH), or in the setting of systemic inflammation, such as, in sepsis, malignancy or autoimmune disease. Untreated, HLH has high rates of mortality. Haematopoietic stem cell transplant (HSCT) provides increased long-term survival for patients with primary HLH but a number of controversies remain. Traditionally myeloablative conditioning (MAC) regimens were used but these have been associated with high levels of transplant related morbidity and mortality. Reduced intensity conditioning (RIC) regimens, including fludarabine and melphalan, have demonstrated substantially reduced transplant-related morbidity and mortality in HLH patients. However, may result in mixed donor/graft chimerism post-HSCT, which contributes to an increased risk of return of disease. It is recognised that timing of serotherapy, with alemtuzumab, also has an impact on HSCT outcome. More recently, a range of other conditioning regimes have also been successfully used. Questions remain regarding choice of donor for HSCT and most appropriate timing to proceed, particularly for those with a genetic predisposotion to HLH but who have not had significant disease.