Cancer Survivorship after the Cure of Childhood Blood Cancers: Risk Based Surveillance

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Advances in therapy for children with leukaemia and lymphoma have been guided by an understanding of therapy associated late effects in survivors treated with legacy dose dense chemotherapy and radiation, and increasing knowledge of disease biology. Exposure based risks and current guidelines for monitoring of late effects are directd by cumulative doses given based on disease burden and risk-based regimens that are now intensified or de-intensified based on early response to therapy. In the case of childhood lymphoblastic leukaemia this has led to elimination or decreased use of cranial radiation and elimination of testicular radiation for most. In some lymphoid leukaemia therapy duration has been reduced by as much as a year. Radiation and hematopoietic stem cell therapies may still play a role in the relapse setting and therefore understanding the monitoring necessary for childhood survivors is imperative. Primary concerns from historic cytotoxic chemotherapies remain requiring surveillance for: late relapse, impaired immunity, cognitive impairment, cardiovascular risks, subsequent malignant neoplasms (SMNs), impaired fertility, and psycho-social concerns in survivors. However, the off-target effects of contemporary therapy including BiTEs, CAR-T cell and tyrosine kinase inhibitors remain unknown and vigilance for emerging late effects will needed in the next generation of survivors. In survivors of Hodgkin lymphoma, the focus has been on response adapted reduction or elimination of radiation therapy and reduction of cumulative doses of alkylating agents and anthracycline, with adoption of cardioprotective strategies. While there is a continued need for surveillance of cardiovascular late effects and SMNs, vigilance will be needed for the risk of late immune related adverse events (irAEs). High quality survivorship care: considers the specific cancer history and treatment, specifies a primary surveillance plan, outlines cancer/cancer treatment health risks, details subsequent cancer/late effects screening, and addresses lifestyle and health behavior impact on cancer-related risks. This necessitates consideration of screening for/management of comorbid conditions, defining the roles of involved providers, and identifying resources to address medical/psychosocial needs as survivors transition from pediatric oncology into community based care.