Autologous And Allogeneic Stem Cell Transplantation Is Associated With Long-Lasting Endocrine Disorders

Sessa M1, Giudice V1, Serio B1, Pezzullo L1, Selleri C1

1Hematology and Hematopoietic Stem Cell Transplant Center, Department of Medicine and Surgery, University of Salerno, Baronissi, Italy (cselleri@unisa.it)

The endocrine system is one of the most frequent target of complication after autologous(auto) and allogeneic(allo) hematopoietic stem cell transplantation (HSCT). We evaluated for endocrine abnormalities a retrospective cohort of 100 consecutive patients who underwent auto- (n=50) and allo- (n=50) HSCT with a median follow-up of 6 years (range, 1-15). All women experienced ovarian insufficiency; in auto- and allo-HSCT patients, serum 17beta-estradiol was reduced, while in allo-HSCT delta-4-androstenedione, circulating androgens and dehydroepiandrosterone were also significantly decreased, especially in women developing graft-versus-host disease (GVHD). Impaired spermatogenesis damage and lower sperm counts were observed in all transplanted patients. Testosterone was reduced in about 30% of patients, particularly during GVHD. The onset of adrenal insufficiency (about 20% of cases) was always related to the duration (>100 days) and cumulative dose (>10 gr/m2) of corticosteroid treatment. Sub-clinical hypothyroidism was found up to 5 years after allo-HSCT, with higher incidence in radiotherapy pre-treated patients, and the “low T3 syndrome” after 12-48 months and in about 30% of auto-HSCT at 3 months. Bone mass density was significantly reduced in auto- and allo-HSCT recipients and GVHD development was associated with a more severe reduction in all bone sites. The underlying diseases, pre-transplant therapies, total body irradiation and high-dose chemotherapy-based conditioning regimens were the main risk factors of endocrine disorders after auto- and allo-HSCT. Our analysis further provide evidence that auto- and allo-HSCT recipients show higher incidence of endocrine disorders suggesting that their early identification may greatly improve the quality of life of long-term survivors after HSCT.