

PRIMARY HYPOGONADISM AFTER HEMATOPOIETIC STEM CELL TRANSPLANT IN PEDIATRIC PATIENTS WITH CANCER

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Background

Gonadal function is altered up to 25% in patients who suffered cancer in childhood. Cryopreservation of ovarian tissue (COT) is an option for preserving fertility.

Aims and Objective

To establish the prevalence of primary hypogonadism (PH) in children with cancer after hematopoietic cell transplantation (HCT). To analyze the variables that predict progression to PH.

Methods

Retrospective cohort study. Patients aged 0 to 18 undergoing HCT from 2004-2014.

Categorical variables in %, continuous normal in mean (SD), non-normal in median [P25-P75].

Independent variables: age at transplantation, gender, total body irradiation (TBI), busulfan, cyclophosphamide, COT.

Dependent variable: PH.

Multivariable logistic regression (LR). Statistical significance p -value < 0.05 .

Results

75 patients underwent HCT, characteristics of patients in table .

Gender	25 women, 50 men
Current age	13.31 years (SD 4.26)
Age at HCT	7.81 years (SD 4.23)
TBI	40%
Conditioning regimen	52.33% busulfan, 18.66% melphalan , 77.3% cyclophosphamide.

30 developed PH, 19 women, 11 men.

Age of onset of PH 11.97 years (SD 3.22).

9 women underwent COT, all developed PH. Characteristics of these women: current age 15.58 years (SD 3.53), age at HCT 11.59 (SD 2.88), 44.4% received TBI, 11.1% abdominal radiotherapy, 33.3% busulfan, 11.1% melphalan, maximum FSH 79.63 mU/ml (SD 39.24).

Characteristic of the other 10 women with PH: current age 12.41 years (SD 4.88), age at HCT 5.98 (SD 3.61), 0% TBI, 30% abdominal radiotherapy, 90% busulfan, 40% melphalan, maximum FSH 43.75 mU/ml (SD 21.40).

In LR model, sex ($p = 0.000$) and age at time of HCT ($p = 0.003$), independently predict progression to PH.

RL was also performed excluding patients under 10 and we found the same results.

Conclusions

Women and patients older at time of HCT are more likely to develop PH.

In girls with PH, FSH is greater in those who underwent COT, but these girls probably received a more gonadotoxic treatment.

