Papillary thyroid cancer

after hematopoietic stem cell transplantation in young age

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Nothing to disclose

Introduction

- Increasing number of survivors following hematopoietic stem cell transplantation (**HSCT**) leads to necessity to focus also on careful monitoring for late effects. High dose chemotherapy and total body irradiation (**TBI**) is used for conditioning regimen in many patients.
- **Thyreopathies** belong to the most frequent among late endocrinopathies.

Objective

Aim of the study was to evaluate **prevalence of secondary thyroid malignancies after HSCT in young age, especially after TBI.**

Subjects

HSCT performed 1989 – 2012

Inclusion criteria

- HSCT in childhood or in adolescence
- Patients surviving more than 1 year after HSCT

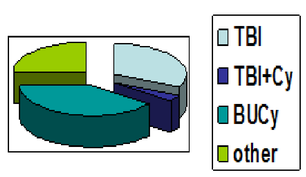
Characteristics of patients

Patients	n	288
Female/Male	n	110/178
Malignant diagnosis	n	177 (61.5%)
TBI 10-14 Gy	n	91 (32%)
Age at HSCT Median (range)	years	8.2 (0.2 – 20.5)
Age at evaluation Median (range)	years	17.9 (1.8 – 40.5)
Time after HSCT Median (range)	years	8.5 (1.3 – 24.3)

Transplant characteristics of study group

Preparative regimen

- TBI : 92
- TBI+Busulphan : 10
- Bu/Cy : 114
- Other : 72



Bu: busulphan Cy: cyclophosphamide

Methods

- **All patients were screened yearly for:** Serum fT4, TSH, thyroid antibodies, thyroid function
- thyroid ultrasound (US) was performed in 62/288 (21.5%) patients with a Toshiba Nemio 17 ultrasound machine, transducer 7.5 MHz

Results

Malignant tumours

4 patients (1.4%) - 2 male, 2 female
all with papillary thyroid carcinoma (**PTC**)
micronodular, T1 or T2 stage
all of these patients survive after PTC, disease free

PTC diagnosed after HSCT	8.7 years (5.3-15.2)
HSCT for malignant diagnosis	n = 3
TBI-based regimen	all 4 patients
Therapy of PTC	thyroidectomy and replacement thyroid hormone in all 1 with additional ^{131}I treatment
Previous therapy for thyreopathy	n=3 AITD n=1 hypothyroidism

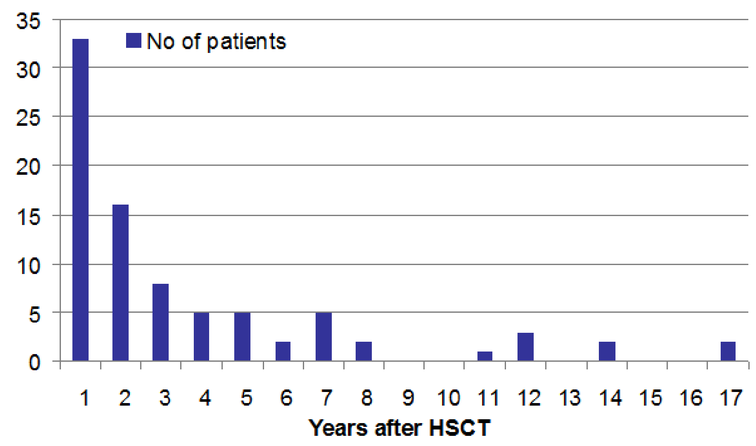
Benign thyroid nodules (FNAB confirmed)

9 patients (3.1%)
7 after TBI-based regimen
4 treated for AITD
all are regularly monitored

Thyroid dysfunction (TDF) after HSCT

Patients with TDF	n (%)	83/288 (29.0%)
Onset of TDF after HCST	years	3.4 (0.5-16.3)
Hypothyroidism subclinical overt primary	n (%)	82 (28.5%) 77 5
Hyperthyroidism	n (%)	2 (0.7%)
AITD (autoimmune thyroiditis)	n (%)	18 (6.2%)

Onset of thyroid dysfunction after HSCT



Conclusions

- **Risk of secondary malignancies after HSCT is increasing within the time.**
- **Long-life late effects monitoring as an important part of post-transplant care is necessary.**
- **Regular sonographic evaluation of thyroid gland and neck is very important especially more than 5 years after HSCT and namely in all patients after TBI.**
- **Regular monitoring of thyroid function, laboratory parameters and ultrasound is highly recommended.**

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