

SUPPLEMENTARY INFORMATION

Supplementary Table 1: Definitions of the long-term complications

Complication	Definition
Alopecia	Permanent alopecia (partial or complete), as clinically assessed
Cardiomyopathy	Left ventricular fractional shortening <28% or left ventricular ejection fraction <55% or treatment for cardiomyopathy or cardiac transplantation
Cataract	Documented cataract
Chronic kidney disease	Documented chronic kidney disease
Coronary artery disease	Documented coronary artery disease
Diabetes	Documented diabetes
Gonadal dysfunction	Gonadal dysfunction is defined as follows: 1) In males: Total testosterone deficiency was defined as a testosterone level <12 nmol/l or elevated LH >10 UI/l or testosterone replacement therapy. 2) In females: association of an oligo/amenorrhea for at least 4 months, and an elevated FSH level >25 IU/L on 2 occasions at 4 weeks apart
Hearing loss	Documented hearing loss, with or without hearing aid
Hypothyroidism	Nontransient elevation of thyroid-stimulating hormone (TSH), with overt hypothyroidism if the elevated TSH is associated with decreased levels of free thyroxine (T4) or triiodothyronine (T3)
Iron overload	Ferritin \geq 1500 ng/ml at least 1 year after leukemia therapy, without concurrent inflammation
Metabolic syndrome	Metabolic syndrome is evaluated in patients aged \geq 18 years based on the presence of \geq 3 of the five National Cholesterol Education Program - Adult Treatment Panel III (NCEP-ATPIII) diagnostic criteria: 1) fasting blood sugar \geq 5.55 mmol/L or on treatment for hyperglycemia; 2) systolic blood pressure (BP) \geq 130 mmHg or diastolic BP \geq 85 mmHg, or on therapy (BP measured using a sphygmomanometer); 3) abdominal circumference \geq 102 cm in males and \geq 88 cm in females (measured midway between the iliac crest and the last rib); 4) triglyceridemia \geq 1.7 mmol/L or on therapy; 5) HDL-cholesterol
Neurological complication	Any significant central nervous system complication
Obesity	Body mass index (BMI) \geq 30 kg/m ² in adults, or BMI \geq the age- and sex-specific international obesity task force (IOTF)-30 cutoff at evaluation in children/adolescents.
Osteonecrosis	Osteonecrosis, confirmed by imaging
Osteoporosis	Bone mineral density Z-score (age-adjusted) of the lumbar spine or femoral neck \leq -2, as assessed using a dual-energy X-ray absorptiometry (DXA) scan

Pulmonary dysfunction	Pulmonary dysfunction is characterized by obstructive syndrome, defined as an abnormal forced expiratory volume in one second to forced vital capacity ratio (FEV1/FVC), or restrictive syndrome, defined as an abnormal total lung capacity (TLC), abnormal diffusion capacity for carbon monoxide (DLCO), or treatment for pulmonary dysfunction.
Short stature	Short stature is defined as a change in the SDS for height of ≤ -2 . This change is calculated by subtracting the SDS at the follow-up visit from the SDS at diagnosis
Stroke	Stroke, confirmed by imaging
Subsequent malignant neoplasms & meningioma	Any histologically proven secondary malignant tumor or meningioma
Underweight	Body mass index (BMI) $< 17 \text{ kg/m}^2$ in adults, or BMI $<$ the age- and sex-specific IOTF-17 cutoff at evaluation in children/adolescents.

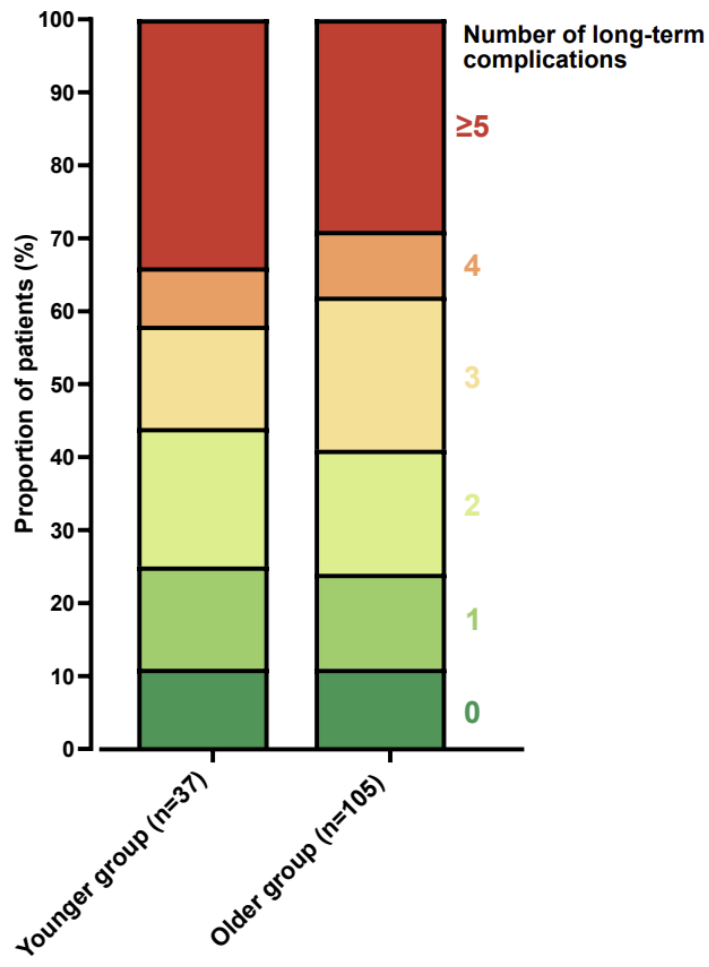
Supplementary Table 2: Health-related quality of life according to age group

QoL dimension	Yonger group* (n=14)	Older group* (n=50)	Adjusted effect on QoL**	
	mean \pm SEM		β	p-value
Physical abilities	85 \pm 7	89 \pm 2	-1.4	0.79
Social life	75 \pm 8	68 \pm 4	9.2	0.28
Limitations due to physical condition	79 \pm 6	81 \pm 4	-1.7	0.82
Limitations due to emotional state	65 \pm 4	67 \pm 3	-0.5	0.92
Mental health	68 \pm 6	61 \pm 3	9.1	0.17
Vitality	52 \pm 6	55 \pm 3	0.4	0.94
Physical pain	77 \pm 7	71 \pm 4	7.9	0.27
Perceived health	60 \pm 6	59 \pm 4	3.4	0.67
Physical composite score	54 \pm 2	54 \pm 1	1.1	0.69
Psychological composite score	42 \pm 3	40 \pm 2	2.7	0.44

*Younger group: 2 to <4 years at HSCT; Older group: 4 to <9 years (girls), 4 to <10 years (boys) at HSCT.

**Adjusted for potential confounders: age at evaluation and sex.

QoL: quality of life.



Supplementary Figure 1: Distribution of the number of long-term complications per patient in younger and older group

Distribution of the total number of the 20 long-term complications per patient among patients aged 2 to <4 years at HSCT (n = 37) and older children (n = 105), assessed at last follow-up. Percentages are indicated within each category.