

Body weight and body composition among Japanese childhood leukemia/lymphoma survivors

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Abstract

Purpose: The study aimed to determine the body composition of Japanese adult survivors with childhood cancer. **Methods:** Between August 2018 and September 2019, we recruited adults aged [?]18 years who had childhood leukemia/lymphoma. Blood sampling, body composition measurement by bioelectrical impedance analysis (BIA), grip strength test, nutrition consultation, and screen viewing time survey were conducted. **Results:** We analyzed the data of 81 survivors with a median age of 25 years. The disease profile comprised 51 cases of acute lymphocytic leukemia, 20 acute myelocytic leukemias, and 10 lymphomas; 34 patients had undergone hematopoietic stem cell transplantation (HSCT). The average body mass index (BMI) was 21 kg/m². Of the patients, 10 (12%) were obese and 18 (22%) were lean. Three patients had metabolic syndromes (MS) and 9 had sarcopenia. There was no significant difference in the frequency of obesity, sarcopenia, and MS in each disease; however, sarcopenia was significantly higher in the transplant group. Further, 30% of obese patients had MS, and 33% of lean patients had sarcopenia. **Discussion:** Leanness and sarcopenia are common in HSCT survivors, and the possible involvement of transplant-related complications is accordingly suspected. The effects of lifestyle cannot be ruled out, and more cases must be analyzed to examine risk factors. **Conclusion:** Some young adult survivors with childhood leukemia/lymphoma may have metabolic syndrome (MS) or sarcopenia. Assessments of body composition by BIA for childhood cancer survivors could benefit to detect MS or sarcopenia in their young adulthood.

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Abbreviations	Abbreviations
MS	metabolic syndrome
HSCT	hematopoietic stem cell transplantation
ALL	acute lymphoblastic leukemia
BIA	bioelectrical impedance analysis
BMI	body mass index
SMI	skeletal muscle mass index
TG	triglyceride
HDL	high density lipoprotein
PAL	physical activity level
FFQ	food frequency questionnaire
GVHD	graft-versus-host disease
SVT	screen viewing time
TV	television
PC	personal computer
EZR	easy R
TBI	total body irradiation
DXA	dual-energy X-ray absorptiometry

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Figure 1. BMI distribution in survivors

