International Cancer Survivor Symposium, February 3rd 2022, Bern

Abstract submission – Oral presentation

Deadline: November 21st, 2021

Presenting author: Fabiën Belle; fabien.belle@ispm.unibe.ch; Childhood Cancer Research Group, Institute of Social and Preventive Medicine, University of Bern, Bern; Center for Primary Care and Public Health (Unisanté), University of Lausanne, Lausanne, Switzerland; +41 (0)31 684 33 47.

Christina Schindera; christina.schindera@ispm.unibe.ch; Childhood Cancer Research Group, Institute of Social and Preventive Medicine, University of Bern, Bern; Pediatric Oncology/Hematology, University Children’s Hospital Basel, University of Basel, Basel, Switzerland; +41 (0)31 684 37 71

Authors:

Fabiën Belle, PhD* Childhood Cancer Research Group, Bern, CH; Unisanté, PMU, Lausanne, CH
Christina Schindera, MD, PhD* Childhood Cancer Research Group, Bern, CH; University Hospital Basel, Basel, CH
Ben Spycher, PhD Childhood Cancer Registry, Bern, CH
Marc Ansari, MD Geneva University Hospital HUG, Pediatric Onco-Hematology Unit, Cansearch Research Laboratory, Geneva Medical School, Geneva, CH
Greg Armstrong, MD, MSCE St. Jude Children’s Hospital, Epidemiology & Cancer Control Department, Memphis, TN, USA
Maja Beck-Popovic, MD Lausanne University Hospital CHUV, Pediatric Hematology-Oncology Unit, Lausanne, CH
Rebecca Howell, PhD Department of Radiation Physics, The University of Texas MD Anderson Cancer Center, Houston, TX, USA
Wendy Leisenring, Sc.D Fred Hutchinson Cancer Research Center, Seattle, USA
Lillian Meacham, MD Cancer Survivor Program, Children’s Health Care of Atlanta, GA, USA
Jochen Rössler, MD Bern university hospital Insel, Pediatric Hematology/Oncology Unit, Bern, CH
Emily Tonorezos, MD National Institutes of Health, Bethesda, Maryland, USA
Nicolas von der Weid, MD University Hospital Basel, Basel, CH
Yutaka Yasui, PhD St. Jude Children’s Hospital, Epidemiology & Cancer Control Department, Memphis, TN, USA
Kevin Oeffinger, MD Duke Cancer Institute, Durham, NC, USA
Claudia Kuehni, MD Childhood Cancer Research Group, Bern, CH; Bern university hospital Insel

* shared first authorship
Background and aims: Survivors of childhood acute lymphoblastic leukemia (ALL) are at increased risk for obesity. We aimed to identify differences between the cohorts in the prevalence of overweight and obesity in childhood ALL survivors compared to siblings; identify risk factors for overweight and obesity, and compare the direction and strength of associations between cohorts.

Methods: The North American Childhood Cancer Survivor Study (CCSS) and the Swiss Childhood Cancer Survivor Study (SCCSS) include ≥5 years survivors of childhood cancer. Adult survivors of childhood ALL diagnosed prior to age 21 years between 1976-1999 were included. CCSS participants were individually matched (3:1) to SCCSS participants on sex and age at assessment. Self-reported heights and weights were used to calculate BMI for 429 Swiss and 1287 North American survivors and compared with 678 Swiss and 2034 North American siblings. We assessed risk factors for being overweight (25-29.9 kg/m²) and obese (≥30 kg/m²) by using multinominal logistic regression.

Results: Overweight and obesity were more common in North American than in Swiss survivors (overweight: 30 vs. 24 %; obesity: 29 vs. 7%) and siblings (overweight: 30 vs. 25%; obesity: 24 vs. 6%). North American survivors were more likely to be obese than their siblings (OR=1.26; 95%CI: 1.03-1.55). In Switzerland, we found the same trend (1.25; 0.72-2.16). Among all survivors, risk factors for obesity were: residency in North America (5.8; 3.7-8.9), being male (1.6; 1.2-2.1), having an older attained age (≥45 years: 5.5; 2.6-11.5), black race (3.2; 1.6-6.4), a low household income (2.2; 1.4-3.6), and age <5 years at diagnosis (1.6; 1.1-2.3). Interaction tests found no difference in risk factors effect between cohorts.

Conclusions: Obesity after childhood ALL is more prevalent in North America compared to Switzerland and seems to be explained mostly by socio-economical than treatment differences.