



Overweight and Obesity in Swiss Childhood Leukaemia Survivors

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Background

Childhood leukaemia survivors (CLS) <10 years after diagnosis are at increased risk for being overweight, but more evidence is needed to see if this persists in long-term CLS. We aimed to:

- I. compare prevalence of overweight between long-term CLS and other childhood cancer survivors (CCS), siblings of CCS, and the Swiss population
- II. compare prevalence of overweight among CLS stratified for cranial radiotherapy (CRT)
- III. identify predictors of overweight in CLS

Methods

Study population: the Swiss Childhood Cancer Survivor Study (1) consists of a questionnaire based survey among all 5-year CCS, diagnosed between 1976-2005, who were registered in the Swiss Childhood Cancer Registry, and were 5-45 years old at the time of the survey.

Body mass index (BMI), outcome: we calculated BMI from medical records at diagnosis and from self-reported heights and weights at survey. Overweight was defined as ≥ 25 kg/m². We calculated age and sex adjusted z-scores using Swiss references for children.

Statistical analysis: we used multivariable logistic regression adjusted for socio-demographic, lifestyle and clinical factors, to assess predictors of overweight at survey. Control groups were standardised according to CLS' socio-demographic characteristics.

Results

The study included 2,365 CCS: 770 CLS and 1,595 other CCS (response rate 70%), 819 siblings (response rate 57%), and 9,591 participants from the Swiss Health Survey 2012 (response rate 53%) (Table 1). Birth weight and height and weight at diagnosis was available for N=417 CLS.

Table 1. Characteristics of study population

	CLS n= 770	Other CCS n=1,595	Siblings n= 819	General population n= 9,591
Female, n (%)	367 (48)	719 (48)	473 (47)	4,946 (48)
Mean age at survey, years (range)	23 (5-45)	24 (5-45)	26 (5-45)	31 (15-45)
Mean age at diagnosis, years (range)	6 (0-21)	9 (0-21)	n.a.	n.a.

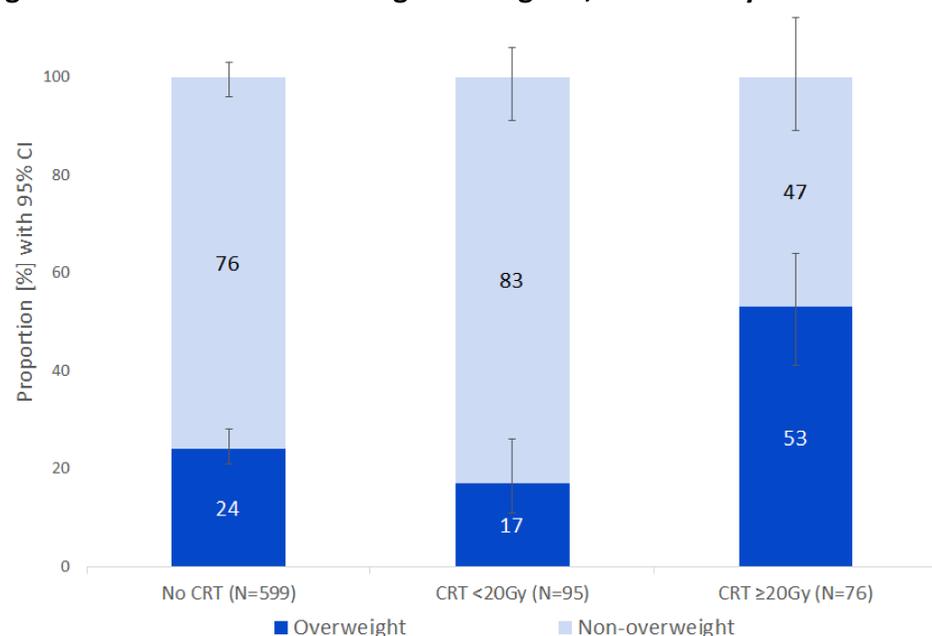
I. Prevalence of overweight

Prevalence of overweight did not differ between CLS and control groups at survey (16 years after diagnosis): 26% of CLS, 25% of other CCS, 22% of siblings, and 23% of the general population were overweight (all $p > 0.05$).

II. Overweight by CRT

CLS who received high dosage CRT (≥ 20 Gy) were more than two times more likely to be overweight at survey than those who received no CRT, p -value < 0.001 (Figure 1).

Figure 1. Prevalence of overweight among CLS, stratified by CRT

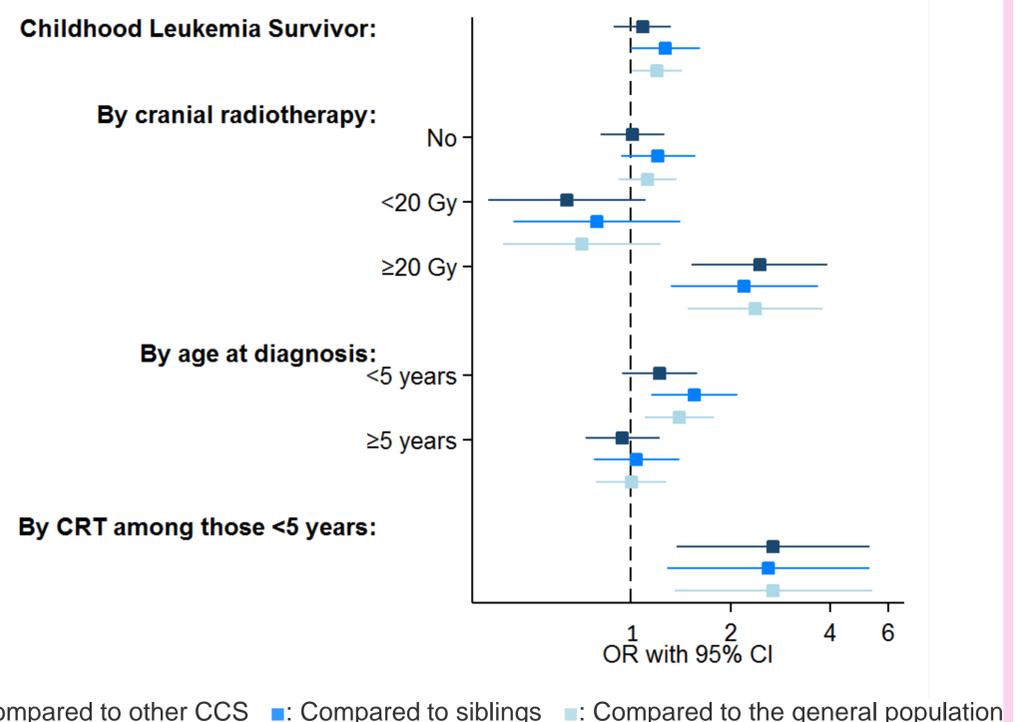


III. Predictors of overweight

Predictors of overweight at survey among CLS were: being a male, young age (<15 years), older age (30-39 years), having received CRT, or being overweight at diagnosis.

CLS who received high dose CRT and were diagnosed at young age (<5 years) were more likely to be overweight, compared to control groups (Figure 2).

Figure 2. Predictors of overweight among CLS compared to other CCS, siblings, and the general population



Squares are odds ratio's and whiskers 95% confidence intervals

Conclusions

In Switzerland, there is little evidence for increased overweight among long-term CLS compared to peers. A possible exception are CLS treated with CRT, who might need extra attention during follow-up care.

¹ Kuehni, C. E., International Journal of Epidemiology, 2012; 41:1553-1564

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Funded by: Swiss Cancer League (Grant No. KLS-3412-02-2014 and KLS-3644-02-2015) and Foundation Force, Lausanne, CH