

## DETECTION OF CARDIAC DYSFUNCTION BY ECHOCARDIOGRAPHY IN SWISS CHILDHOOD CANCER SURVIVORS – A PILOT STUDY

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**Background:** Cardiovascular disease (CVD) is the leading non-malignant cause of late deaths in childhood cancer survivors (CCS). Early detection and medical intervention is important to improve outcome, as CVD and cardiac dysfunction remain asymptomatic for many years.

**Aims:** 1) To evaluate the prevalence of cardiac dysfunction in CCS using conventional and novel echocardiography techniques, and 2) to investigate the association between cardiac dysfunction and treatment.

**Methods:** We invited CCS for a cardiac follow-up to the University Children`s Hospital Bern, Switzerland. A standardized medical history, a physical examination including anthropometric data and blood pressure measurements, as well as an echocardiography including assessment of 3-dimensional (3D), left ventricular ejection fraction (LVEF) and global longitudinal strain were performed. Recruitment is ongoing; we aim to include 711 CCS, including 391 with cardiotoxic treatment (anthracyclines and/or chest irradiation), and 320 without cardiotoxic treatment. Herein, an interim-analysis with the first 30 patients is presented.

**Results:** Thirty CCS with a median age of 34 years (range 20-51; 60% male) and a median time since diagnosis of 24 years (range 11 – 39 years) were assessed. Twenty-one CCS had been exposed to both anthracyclines and chest irradiation and nine CCS to anthracyclines alone. At examination, only one CCS (3%) had abnormal 3D LVEF (<50%), whereas 14 CCS (47%) had abnormal global longitudinal strain ( $\leq$  -18%). Median 3D LVEF was 62.8% (range 41% – 74%) and median global longitudinal strain was -17.5% (range -22% to -9%).

**Conclusions and outlook:** According to these preliminary results, global longitudinal strain might be more sensitive in detecting early cardiac dysfunction compared to 3D LVEF in CCS.