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Digital Physical Activity Surveillance and Personalized Counseling for Cardiovascular Prevention in Survivors of Childhood and Adolescent Hodgkin Lymphoma –Design of the Cardio-HOPE Randomized Controlled Trial

Background: Survivors of childhood and adolescent Hodgkin lymphoma (HL) exposed to cardiotoxic therapy face a substantially increased risk of long-term cardiovascular morbidity. Physical activity (PA) is a key modifiable risk factor for cardiovascular risk reduction; yet, sustainable PA promotion in survivorship care remains challenging. The Cardio-HOPE study evaluates whether digitally supported, personalized counseling can increase moderate-to-vigorous physical activity (MVPA) in HL survivors through a 6-month intervention combining graded PA promotion, individualized live counseling, and continuous monitoring.

Methods: This randomized, controlled, open, three-arm multicenter trial aims to enroll 200 HL survivors diagnosed before age 21, treated with anthracyclines and chest irradiation, ≥ 5 years post-treatment without manifest cardiovascular disease. Following exercise and cardiological assessment to determine physical performance and medical eligibility, participants will undergo a 4-week baseline assessment using wearable-based monitoring, medical, and daily-life parameters for stratification according to PA levels and are randomized (1:1:1) to: (1) control group receiving a wearable without feedback, (2) intervention group 1 receiving a wearable and monthly general PA information, or (3) intervention group 2 receiving a wearable plus personalized PA counseling over 6 months. Primary endpoint: Objectively measured MVPA increase at 6 months. Secondary endpoints: MVPA, sedentary time, adherence to international PA guidelines at 3, 6, and 9 months.

Perspective: This approach integrates exercise oncology expertise into a digital health application, enabling continuous monitoring of PA and functional performance in daily life. Personalized counseling is based on objectively assessed performance and digital activity data. The intervention combines structured feedback, behavioral support, and individualized PA recommendations to facilitate long-term adherence in cardio-oncology survivorship care. Cardio-HOPE will provide evidence on the effectiveness of personalized digital PA interventions to increase MVPA among HL survivors and support implementation of individualized exercise-based cardio-oncology survivorship care pathways.

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Conflict of Interest & Ethical Approval

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Abstract submitters declaration

yes

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