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RISE-YA: A Novel Intervention for Young Adult Brain Tumor Survivors with Cancer Related Fatigue-Study Protocol for a Randomized Controlled Trial

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Introduction: Cancer-related fatigue (CRF) disproportionally impacts survivors of adolescent and young adult (YA) brain tumors. CRF is understudied and poorly managed in this population. While exercise training has demonstrated efficacy at improving CRF in adult cancer survivors—potentially by improving cellular energy production and reducing inflammation—it has not been tested in fatigued YA brain tumor survivors. YAs'life stage, where many are completing their education and seeking independence, limit their engagement in interventions designed for adults. CRF may further hinder intervention adherence. To address these challenges, we have developed the Remote Implementation of Supervised Exercise for YAs (RISE-YA) intervention. This trial will test the efficacy of RISE-YA to improve CRF, physical activity (PA), and physical function in fatigued YA brain tumor survivors. We will also determine associations of cellular energy production and inflammation with CRF and intervention effects on these potential biological indicators.
Methods: This 24-week, two-arm randomized controlled trial (NCT07186556) has Institutional Review Board approval. Up to 150 fatigued YA brain tumor survivors (diagnosed at 15-39 years; 6 months to <5 years post-treatment) will be recruited from MD Anderson Cancer Center and UTHealth Neurosciences in Houston, Texas, USA and randomized 1:1 to the RISE-YA intervention or attention control. The intervention group will receive 12-weeks of virtually delivered supervised strength and aerobic exercise, energy conservation counseling, and behavioral change coaching. The attention control group will discuss survivorship topics. Outcomes, measured at baseline, 12-weeks, and 24-weeks, include CRF (Multidimensional Fatigue Inventory), PA (accelerometer), physical function (timed up & go, single leg stand, 1-minute chair stand, 6-minute walk test, hand grip strength), oxidative phosphorylation in peripheral blood mononuclear cells, and circulating inflammatory mediators (systemic inflammation index, C-reactive protein, interleukin (IL)-6, tumor necrosis factor (TNF), TNF receptor 2, IL-1 receptor antagonist, IL-10). Results will be disseminated through peer-reviewed publications and presentations.

Keywords

CRF; Exercise; Energy Conservation; Inflammation

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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