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## Effect of a Multidisciplinary Intervention on Fatigue in Lymphoma Survivors with Persistent Fatigue- A Randomized Controlled Trial (the REFUEL-trial)

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Background: Persistent fatigue is a prevalent, complex and distressing late effect after cancer, but few treatment options exist. We tested the effect of a multidisciplinary intervention on fatigue in lymphoma survivors with persistent fatigue ( $\geq 6$  months).

Patients and methods: Survivors mean 7 years post-treatment were randomly assigned to usual care ( $n=75$ ) or a 12-week multidisciplinary intervention ( $n=75$ ), consisting of patient education, exercise, cognitive behavioral therapy and nutritional counseling. The primary outcome was total fatigue score assessed by the Chalder Fatigue Questionnaire (FQ) (range 0 to 33) 3 months post-randomization. Secondary outcomes included physical and mental fatigue assessed by FQ, health-related quality of life assessed by European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-C30, peak oxygen uptake (VO<sub>2</sub>peak) and adherence to dietary guidelines measured by a diet index (range 0 to 19). Outcomes were assessed at baseline (T0) and 3 (T1), 6 (T2) and 9 (T3) months post-randomization. Effects were analyzed with baseline-adjusted linear mixed models for repeated measures.

Results: The intervention group reported lower total fatigue than usual care group at T1 (12.8 SD 6.5 vs. 16.9 SD 6.5). The between-group difference (BGD) was -3.5 (95% CI, -5.4, -1.6),  $P<0.001$ . The intervention group also had less physical (BGD -2.4, 95% CI, -3.8, -1.0) and mental fatigue (BGD -1.1, 95% CI, -1.7, -0.4), higher physical (BGD 3.8, 95% CI, 0.2, 7.3) and role (BGD 9.2, 95% CI, 0.9, 17.5) functioning, and higher global health status/quality of life (BGD 9.5, 95% CI, 3.5, 15.4), VO<sub>2</sub>peak (BGD 1.1 mL/kg/min, 95% CI, 0.2, 1.9) and diet index (BGD 2.5, 95% CI, 1.5, 3.6) than usual care group at T1. The BGD was reduced at T2 and T3 for most outcomes.

Conclusions: The 12-week multidisciplinary intervention had a positive short-term effect on fatigue in lymphoma survivors with persistent fatigue.

### Keywords

persistent fatigue, cancer survivors, lymphoma, multidisciplinary intervention

### Conflict of Interest & Ethical Approval

yes

### Abstract submitters declaration

yes

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