BERLIN 2025 ESMO congress

LBA28

Predictors of adherence to the structured exercise program and physical activity target in the Canadian Cancer Trials Group CO.21 CHALLENGE trial

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Background

CHALLENGE randomized 889 patients with colon cancer to a structured exercise program over 3 years (SEP) or health educational materials following adjuvant chemotherapy. The study met the endpoints of improved disease-free and overall survival. Herein we report factors associated with adherence to the SEP and the protocol-specified physical activity (PA) target.

Methods

The SEP was delivered in 48 sessions over 3 phases; Phase I, 1-6 mos; Phase 2, 7-12 mos; Phase 3, 13-36 mos. Participants were classified as adherent if they attended ≥75% of structured exercise sessions in each Phase. They were classified as achieving the PA target if they increased by ≥8 MET hrs/week from baseline in each Phase. Patient and system-level factors associated with both outcomes were evaluated using logistic regression models.

Results

Rates of adherence to structured exercise sessions were 77% (344/445), 63% (251/398), 53% (188/358) in each Phase. Factors (OR, 95% CI) associated with adherence in Phase 1: ≥500 meters 6 minute walk test (1.96, 1.21-3.17); Phase 2: adherence in Phase 1 (11.1, 5.47-22.5), country (4.17, 1.25-4.50), high accrual (1.77, 1.03-3.05); Phase 3: adherence in Phase 1 (3.50, 1.58-7.76), adherence in Phase 2 (4.12, 2.33-7.29), country (30.3, 3.52-250), ≥150 mins pre-diagnosis moderate-to-vigorous exercise (2.26, 1.27-4.00). The proportion of participants increasing PA levels by ≥8 MET hrs/week were 52% (189/362), 55% (186/336), 47% (111/236) in each Phase. Factors (OR, 95% CI) associated with reaching this threshold in Phase 1: adherence to exercise sessions in Phase 1 (2.37, 1.31-4.30), BMI<30 (1.62, 1.03-2.56), oxaliplatin adjuvant regimen (1.92, 1.14-3.23), baseline PA <10 MET hrs/week (3.45, 2.17-5.26); Phase 2: adherence to exercise sessions in Phase 2 (2.14, 1.23-3.73), ≥8 increase in MET hrs/week in Phase 1 (3.30, 2.00-5.44), baseline PA <10 MET hrs/week (1.82, 1.10-3.03); Phase 3: baseline PA <10 MET hrs/week (2.01, 1.09-3.68).

Conclusions

Adherence to the first 6 months of the SEP was a key and consistent predictor of subsequent adherence and achieving PA targets. Findings can guide implementation of “adjuvant exercise” as a standard of care for patients with colon cancer.

Clinical trial identification

NCT00819208.

Legal entity responsible for the study

Canadian Cancer Trials Group.

Funding

Canadian Cancer Society, National Health and Medical Research Council of Australia, Cancer Research UK.

Disclosure

S. Gill: Financial Interests, Personal, Advisory Board: Roche Canada, Eisai, Taiho Canada, Merck Canada, Pfizer, Bristol Myers Squibb, Ipsen Canada, AstraZeneca, Takeda; Non-Financial Interests, Leadership Role, Past-President: Canadian association of medical oncologists; Non-Financial Interests, Project Lead, Chair, GI Disease Site Committee: Canadian Clinical Trials Group. R.K. Wong: Financial Interests, Personal, Other, expert panel in radiotheranostics: Novartis; Financial Interests, Institutional, Local PI, Trial per case funding: Precirix; Financial Interests, Institutional, Funding, Education grant: Bruce Power; Financial Interests, Institutional, Local PI, Clinical trial funding: Rayzebio; Non-Financial Interests, Member of Board of Directors: International Cancer Expert Corp. V. Coyle: Financial Interests, Personal, Invited Speaker: Servier; Financial Interests, Personal, Advisory Board: GSK; Financial Interests, Personal, Other, conference attendance, travel: Servier, Takeda; Financial Interests, Institutional, Research Grant, Pre-clinical research funding and IMP supply and funding to support clinical trial: Taiho Oncology. N. Chua: Financial Interests, Personal, Invited Speaker: Merck; Financial Interests, Personal, Advisory Board: Roche, AbbVie, BeiGene, Pfizer; Financial Interests, Institutional, Local PI: ADC Therapeutics, AstraZeneca, Biontech Rna Pharmaceuticals GMBH, GSK, Pfizer; Non-Financial Interests, Member: American Society of Clinical Oncology (ASCO). D. Jonker: Financial Interests, Institutional, Local PI: Merck, Ocellaris, BMS, Janssen, Pfizer, SeaGen, GSK, Gilead, RGenta, AstraZeneca, Arcus, Amgen, BioNTech, Qu Biologics, Bold therapeutics, EMD Serono, Mirati Therapeutics, Genetech, HotSpot Therapeutics. A. Reiman: Financial Interests, Personal, Advisory Board: AstraZeneca, Roche, Sanofi, Janssen. All other authors have declared no conflicts of interest.