A 16-week Randomized Controlled Trial of a Fish Oil and Whey Protein-Derived Supplement to Improve Physical Performance in Older Adults Losing Autonomy – A Pilot Study

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Objectives: Loss of autonomy is often the trigger for institutionalization of older adults. A nutritional intervention within a rehabilitation program may attenuate loss of muscle mass and function to enable continued autonomy in this understudied group of seniors. Objectives: 1) To assess the feasibility of a combined nutrient supplementation intervention with regards to recruitment, compliance, and completion of assessments in older adults losing autonomy; 2) to characterize this specific population.

Methods: Seniors taking part in a rehabilitation program were randomized to an intervention with a supplement (EXP: 2 g fish oil (EPA + DHA) with 1500 IU vitamin D3 1x/d + 20–30 g whey protein powder with 3 g leucine 2x/d) or placebo (CTR; corn oil and maltodextrin powder) for 16 weeks. Lean soft tissue mass (LM) and physical function were assessed. LM (DXA) was measured at weeks 0 and 16, handgrip and knee extension strength (dynamometry), physical performance tests and plasma phospholipid n-3 fatty acids (GCMS) were evaluated at weeks 0, 8 and 16.

Results: Over 2 y, 244 patients were screened, 46 were eligible (18.9%; 95% CI: 15.0, 22.8), 20 were randomized, 10 completed the study (n = 4 in EXP; n = 6 in CTR). Median age was 87 y (77–94 y; 75% women), 35% had low LM, 35% were frail, 85% were using a walking aid daily and physical performance was low, at baseline. Overall self-reported compliance to powder was 96% (95% CI: 83, 108) and to oil, 85% (95% CI: 63, 107). The EXP median protein intake alone surpassed the target 1.2–1.5 g/kg/d for older adults, without altering usual diet. Proportions of EPA and DHA increased significantly 3- and 1.5-fold respectively at week 8 in EXP, with no change in CTR. Participants were able to complete most assessments with sustained guidance.

Conclusions: Because of low eligibility limiting the pool of potential patients, the pilot study was interrupted as deemed non-feasible; however, compliance to supplements and the rigorous study assessments was high. Solutions to address recruitment, such as more liberal eligibility criteria, need to be considered in the design of a large-scale RCT before it can be carried out in this challenging population.

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