

Clinical benefits of oral nutritional supplementation for elderly hip fracture patients: a single blind controlled trial

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Background:

Hip fractures and the needed surgical repairs are associated with significant morbidity and mortality in older adults. Recovery may be negatively impacted by malnutrition that exists prior to fracture or that develops during post-operative recovery. The intake of oral nutritional supplements (ONS) during the recovery period is expected to play an important role in preventing or treating malnutrition, thus contributing to improved healthcare outcomes for older patients with hip fracture.

Objective:

This randomized controlled trial of older adults who underwent surgery for proximal femoral fractures aimed to identify differences in recovery outcomes between patients who did and did not receive twice-daily ONS (experimental vs control groups) for up to 28 days in a rehabilitation hospital.

Methods:

A total of 126 post-operative patients were randomized into 2 groups with all patients receiving regular diets, daily oral vitamin D (800-1,000 IU), calcium (1,200 mg), and rehabilitation therapy. The experimental group (n=65 patients) was given ONS twice daily (total of 500 kcals with 18-24 grams protein), starting within 3 days of admission to the rehabilitation unit and continuing for the duration of stay. The study examined clinical and functional outcomes, i.e., albumin, body mass index (BMI), functional independence measure (FIM), and mobility (elderly mobility scale, EMS). These assessments were ordered or conducted by dietitians, occupational and physiotherapists, physicians, and nursing staff at admission, at discharge, and at a 4-week follow-up appointment.

Results:

Clinical and functional outcomes

There were no statistically significant differences in serum albumin, FIM, or EMS between groups.

Calorie and protein intake

The calorie and protein intakes were similar for both groups upon admission to the rehabilitation unit, but were significantly higher in the ONS group (353.1 kcal, $p<0.05$; 10.1 grams protein, $p<0.05$) during their stay. Compliance with the use of ONS was 77.7% (SD: 20.9). The mean number of days on ONS was 20.2 (SD: 6.9). In the ONS group, the proportion of patients meeting their protein and calorie needs was significantly higher in the ONS group compared to the control group (67.2% vs 8.7%, $p=0.043$).

Nutritional assessment

Between-group differences in BMI change were observed at discharge and at follow-up, respectively, with small declines of 0.25 and 0.03 kg/m² in the ONS group but greater declines of 0.72 and 0.49 kg/m² in the control group ($p=0.012$).

Infection episodes

The total number of infection episodes for the ONS group was reduced significantly compared to the control group (14 vs 29, $p=0.019$). The total number of complications trended lower in the ONS group than the control group, but the difference was not statistically significant (30 vs 60, $p=0.068$).

Length of stay

The length of stay in the hospital rehabilitation unit for the ONS group was significantly shorter than the control group—a mean difference of 3.80 days (SE = 1.81, $p=0.04$).

Conclusion:

By maintaining or restoring nutritional status with ONS use, weight loss was prevented, infection episodes were reduced, and rehabilitation hospital length of stay shortened. Thus, daily intake of ONS is advised for older patients who have undergone surgery after hip fracture.

Study Summary Prepared by Nestlé Health Science.

The complete study can be accessed at:

<https://pubmed.ncbi.nlm.nih.gov/22685164/>