Impact of a protein and energy dense nutritional supplement containing eicosapentaenoic acid on weight-losing patients with head and neck cancer


BACKGROUND: Patients with squamous cell cancer of the head and neck (HNSCCa) often lose weight. Under-nutrition is associated with increased postoperative complications and mortality (Nozoe, 2002). A protein and energy dense nutritional supplement (SUP) containing the omega-3 fatty acid eicosapentaenoic acid (EPA) can increase weight and lean body mass (LBM), and improve physical activity and quality of life in pancreatic cancer patients (Fearon et al, 2003; Moses et al, 2004). The purpose of this study was to determine the impact of pre- and peri-operative use of the SUP on weight-losing HNSCCa patients.

METHODS: Preoperatively, HNSCCa patients with at least 5% premorbid weight loss anticipating surgical resection with curative intent (+/- chemoradiation) were offered 2 cans of SUP (300 kcal, 16g protein, 1g EPA/can) daily beginning at least 2 weeks before surgery. Weight was measured at baseline, hospital admission, and discharge. LBM was measured using bioelectrical impedance (Bodystat QuadScan 4000) at baseline and at hospital discharge. Weight and/or LBM were not available for all patients. Statistical comparisons were with the Wilcoxon Signed Rank Test.

RESULTS: Of the 38 patients who consented, 4 had disease progression and did not undergo surgery, 2 withdrew due to SUP intolerance, and 1 was unable to complete study diaries, yielding 31 subjects: Male: 74%, Mean Age: 62 years, Stage IV: 71%, Mean Pre-Study Weight Loss: 12%, Mean Supplement Consumption: Pre-admission: 1.8 cans/day, In-Hospital: 1.5 cans/day. 70% maintained or gained weight before admission: Mean weight gain pre-admission: 1.6 lb (n=27), at discharge: 1.5 lb (n=30). 23 subjects had LBM measured at discharge: Mean increase in LBM at discharge: 7 lb (p<0.001, n=23).

CONCLUSIONS: A protein and energy dense, EPA-containing nutritional supplement can halt or reverse weight loss and increase LBM in HNSCCa patients. Because improving nutrition before surgery can decrease post-operative complications and length of stay (Gianotti et al, 2002), this supplement might be an appropriate component of a preoperative nutrition program.