

## **Changes in nutrition impact symptoms, nutritional and functional status during head and neck cancer treatment**

### **ABSTRACT**

**Background:** The purpose of this study is to evaluate changes in nutrition impact symptoms (NIS) and nutritional and functional status that occur throughout radiotherapy in head and neck cancer (HNC) patients. **Methods:** A prospective observational study of HNC inpatients who underwent radiotherapy with or without chemotherapy were recruited to participate. Fifty patients were followed for the periods before, in the middle and at the end of radiotherapy. Nutritional parameters were collected throughout radiotherapy. **Results:** According to Patient-Generated Subjective Global Assessment (PG-SGA), there was an increase from a baseline of 56% malnourished HNC patients to 100% malnourished with mean weight loss of  $4.53 \pm 0.41\text{kg}$  (7.39%) at the end of radiotherapy. Nutritional parameters such as muscle mass, fat mass, body mass index, dietary energy and protein intake decrease significantly ( $p < 0.0001$ ) while NIS score, energy and protein intake from oral nutritional supplements (ONS) increased significantly ( $p < 0.0001$ ). Hand grip strength did not differ significantly. All HNC patients experienced taste changes and dry mouth that required ONS at the end of treatment. ONS compliance affected the percentage of weight loss ( $p = 0.013$ ). **Conclusions:** The intensive nutritional care time point was the middle of RT. The PG-SGA and NIS checklist are useful for monitoring nutrition for HNC patients.

**Keyword:** Head and neck cancer; Nutritional status; Malnutrition; Nutrition impact symptoms; Dietary intake; Oral nutritional supplements