

Nutritional Status and Nutritional Risk in Patients with Neuroendocrine Tumors

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Background: Malnutrition is common in patients with cancer and is associated with impaired function and reduced quality of life. No data are available on nutritional status and nutritional risk in patients with neuroendocrine tumors (NET). Therefore we aimed to assess: 1) nutritional status, 2) nutritional risk and 3) whether nutrition impact symptoms (NIS) encompassing nausea, dry mouth, pain affecting appetite, swallowing difficulties, changes in taste and early satiety are related to nutritional status or nutritional risk in NET patients.

Methods: We performed a cross-sectional study in NET outpatients at department of Hepatology and Gastroenterology, Aarhus University Hospital, ENETS NET Center of Excellence. We measured the body mass index (BMI). Handgrip strength (HGS) was used as a marker of nutritional status. Nutritional risk was determined by the NRS-2002. NIS was assessed by the eating symptoms questionnaire (ESQ), and the disease related appetite questionnaire (DRAQ). Data are presented as median (IQR) or %.

Results: We included 139 patients (53% w). Age 66 (19 - 91) years, BMI 24.5 (15 - 44) kg/m². A BMI < 20.5 was found in 15.1%. A Low HGS (w < 20 kg, m < 30 kg) was found in 24.5% and 27.5% were at nutritional risk. Patients with BMI < 20.5 had increased risk of having a dry mouth (p < 0.05). Low HGS was

associated with a higher risk of the NIS ($p < 0.05$). Patients at nutritional risk more often had a stomach ache, dry mouth, pain affecting appetite, changes in taste, chewing difficulties, poor appetite, early satiety, rare hunger and reported that their disease influenced their appetite for more than 3 months (all < 0.05).

Conclusions: Almost 1/3 of NET outpatients were at nutritional risk or had impaired nutritional status and this was associated to specific NIS in NET patients. We recommend that NET outpatients should be screened with HGS and NRS-2002.