

BODY WEIGHT LOSS $\geq 5\%$ DURING RADIOTHERAPY CONFERS A BETTER OVERALL SURVIVAL IN NPC PATIENTS WITH PRETREATMENT BMI ≥ 25

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Objectives/Hypothesis : The association between weight loss during radiotherapy (RT) and patients' survival has not been assessed in patients with nasopharyngeal carcinoma (NPC). This study was aimed to investigate this association and also determine whether pretreatment body mass index (BMI) affects the association between weight loss and overall survival.

Methods : 1583 NPC patients diagnosed between 1995 and 2007 undergoing definitive RT were consecutively enrolled. Survival analyses were performed with stratification according to weight change ($\geq 5\%$ vs. $< 5\%$) and pretreatment BMI (≥ 25 vs. < 25) respectively. Cox proportional hazards model was carried out to evaluate the impact of weight change, pretreatment BMI on survival controlling for the other clinically relevant factors.

Results : Weight change ($\geq 5\%$) during RT is significantly influenced by age, chemotherapy, RT duration and pretreatment BMI. A statistically significant association between the status of weight change and overall survival could be identified both in univariate and multivariate analyses. After further stratification by BMI (≥ 25 or < 25), there is a significantly positive impact of weight loss $\geq 5\%$ on survival particularly among the patients who are overweight or obese ($p = 0.046$, log-rank test).

Conclusions : A weight loss $\geq 5\%$ during RT confers a more favorable overall survival in NPC patients who are initially overweight or obese (BMI ≥ 25). The explanation for this phenomenon warrants further analyses with regard to locoregional control and underlying biological mechanisms.

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Key words: Nasopharyngeal carcinoma, Prognosis, Weight change, Body mass index, Obesity, Radiotherapy