The Impact of Smoking, Alcohol Use, Recurrent Disease, and Age on the Development of Neck Fibrosis in Head and Neck Cancer Patients Following Radiation Therapy

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Abstract

Objectives This study investigates the incidence of neck fibrosis in head and neck cancer (HNC) patients following radiotherapy with respect to patient age, treatment characteristics, history of alcohol and tobacco use, and disease recurrence. Design A retrospective review of all patients being treated for HNC at a rural tertiary care center between 2013 and 2017 was performed. Participants 90 patients being treated for HNC, aged 19 to 99 years. Main outcome measures Incidence and Grade of head and neck fibrosis. Correlation with treatment/patient characteristics was performed using Chi-squared and Mann-Whitney U tests for univariate analysis and multiple logistic regression for multivariate analysis. Results Factors associated with an increased incidence of fibrosis included smoking during radiotherapy ($p < 0.001$), alcohol use ($p = 0.026$), recurrent disease ($p = 0.042$), and age less than 60 ($p < 0.001$) on univariate analysis. Factors associated with increased grade of fibrosis in HNC patients included recurrent HNC ($p = 0.033$), alcohol use ($p = 0.013$), patient age younger than 60 years ($p = 0.018$), smoking during radiotherapy ($p < 0.001$), and non-Caucasian race ($p = 0.012$). Conclusions Identification and intervention directed at patients who possess risk factors associated with fibrosis prior to treatment has the potential to improve the long-term quality of life for HNC patients.

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