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Demographic, lifestyle, and clinical factors associated with accelerometer-based physical activity in patients with head and neck cancer: a prospective cohort study

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Abstract

Background

Patients with head and neck cancer (HNC) typically show low levels of physical activity (PA) due to disease- and treatment-related effects.

Objective

To objectively assess changes in PA and moderate-to-vigorous physical activity (MVPA) from HNC diagnosis up to two years post-treatment, and to identify demographic, lifestyle, and clinical factors associated with PA and MVPA levels and their trajectories.

Methods

This study used data from the prospective NET-QUBIC cohort. PA was measured using a waist-worn accelerometer (ActiGraph-wGT3X) before treatment and at 6-, 12-, and 24-months post-treatment. Linear mixed models were used to examine changes in PA (counts/minute) and MVPA (minutes/day) over time, and to assess associated patient characteristics.

Results

Of the 737 included patients, 517 completed at least one PA measurement. Multivariable analyses showed no independent overall time effect. However, alcohol use and sex showed time-dependent associations with PA and MVPA. Alcohol users were more active at baseline, but their activity declined to levels comparable to non-users at later time points. Females had higher levels of PA at baseline, but males consistently had higher levels of PA and MVPA after treatment. Comorbidities, smoking, and older age were significantly associated with lower PA and MVPA. A WHO performance score of one or two was associated with lower PA.

Conclusion

PA and MVPA did not significantly change over time, but trajectories differed by alcohol use and sex. Smoking, comorbidities, older age, and a WHO performance score of one or two were consistently associated with lower activity levels. Our findings suggest that patients with HNC engage in less PA and MVPA compared to other populations with cancer.

Clinical impact

These findings highlight the urgent need for early and sustained rehabilitation programs and may inform risk profiles which could help clinicians determine the focus and intensity of these programs.

Keywords

Head and Neck Neoplasms, Physical activity, Accelerometer, Physical Fitness

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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