Late Effects after Radiotherapy for Head and Neck Cancer

ABSTRACT

Introduction Head and neck cancer is usually treated with a combination of radiotherapy, surgery and/or chemoradiation. These treatments have known severe late effects as trismus and swallowing dysfunction with or without aspiration.

Aim and Methods The aims of the present studies were to study late effects after accelerated (AF) or conventional (CF) radiotherapy for head and neck squamous cell carcinoma in a subgroup of the ARTSCAN trial. Fifteen months after ARTSCAN was closed for inclusion 124 patients was included in a longterm follow-up. The patients underwent a thorough ENT-examination including maximum mouth opening.

Swallowing dysfunction was examined by videofluoroscopy including evaluation of aspiration, larynx elevation and pharynx transit time. Subjective trismus and dysphagia was evaluated using quality of life measurements questionnaires EORTC QLQ-C30 and QLQH&N35. The absorbed radiation dose to the masticatory muscles, the temporo-mandibular joint and larynx was calculated. Data on survival 5-7 years after the videoflouroskopy has been gathered from the Swedish National Population Register.

Preliminary Results No significant differences in patient-reported trismus or maximal interincisal distance were found between the two trial arms. Trismus incidence increased from 3% at the start of treatment to 25% at the long-term follow-up. The dose to the ipsilateral masseter was most significantly associated with trismus. Aspiration was found in 51/109 (47%) patients and silent aspiration in 34/97 (35%). Neck dissection (n=48 patients) was significantly associated with both aspiration and silent aspiration. Silent aspiration was significantly more common among patients treated with AF (24/54, 44 %) compared to CF (10/43, 23 %; p=0.034). Aspiration was also more common after AF (34/61; 56 %) than after CF (17/48; 35 %; p=0.053). Preliminary data show that overall survival is significantly reduced in the patients who aspirated, compared to those who did not, after radiotherapy, regardless of fractionation.

Importance Trismus and swallowing dysfunction with aspiration are persistent complications after radiotherapy with 3D-conformal radiation therapy. These disorders can compromise normal eating, have a negative impact on quality of life, and aspiration was associated with
reduced over all survival. How to reduce these late effects are important areas for further studies.

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