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Abstract

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Retrospective Review of Swallowing Outcomes for Oropharynx and Larynx Patients after Chemoradiation

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Abstract

Purpose

To collect our institutional experience and assess dysphagia prior to, during and after chemoradiation for oropharyngeal and laryngeal cancer patients. This data can be used for future comparison with patients treated with newer radiation therapy techniques that are designed to decrease cumulative dose to swallowing structures.

Methods

We conducted a retrospective review of oropharyngeal and laryngeal cancer patients who were treated with chemoradiation with curative intent at the University of Iowa Hospitals and Clinics (UIHC) from 2019-2022. Manual chart review was completed using Epic electronic health records. Charts were reviewed retrospectively for patient demographics, tumor characterization, treatment, the use of feeding tubes, and current cancer status. Speech therapy visits were reviewed for multiple outcomes. The EAT-10 scale (0-40: 0 = no swallowing problems, 40 = severe dysphagia) was used to assess the patients' self-perceived issues with dysphagia. The Penetration and Aspiration Scale (PAS, 1-8: 1 = no penetration, 8 = aspiration with no attempt to clear) and impairment of swallowing phases from oropharyngeal motility studies (OPMS, scaled from normal to severe impairment) were used to assess dysphagia from swallowing imaging. Linear mixed effects regression was used to estimate the rate of change in mean swallowing assessment scores from baseline, and to assess differences in baseline scores and the rate of change across disease and clinical characteristics.

Results

There were 109 patients who qualified for this study. 89 patients were treated for oropharyngeal cancer and 20 were treated for laryngeal cancer. There was a statistically significant increase in the mean EAT-10 scores from baseline to initial follow-up (10.14 vs. 13.27, p=0.03) for all patients. The rate of change in EAT-10 scores also significantly differed (p<0.01) based on whether the baseline EAT-10 assessment was prior, during or before radiation therapy. Mean PAS scores were significantly greater at initial follow-up compared to baseline (3.94 vs. 3.14, p=0.04) for all patients. Additionally, the mean baseline PAS scores were found to significantly differ between larynx and oropharynx patients (4.63 vs. 2.81, p=0.01). Larynx patients with a baseline and follow-up OPMS displayed improvements in the pharyngeal and cervical esophageal phases, while oropharynx patients displayed a decline in each of these phases, although these differences were not statistically significant. Patient-reported dysphagia via EAT-10 scores generally mirrored clinician assessments via PAS and OPMS.

Conclusion

Retrospective review of swallowing outcomes at UIHC indicates that dysphagia worsens in oropharyngeal and laryngeal cancer patients in the months immediately following chemoradiation, where patients experience more self-perceived issues with swallowing and have higher degrees of penetration and

aspiration. Laryngeal cancer patients have higher degrees of penetration and aspiration than oropharyngeal cancer patients at baseline. Future prospective studies will continue to evaluate swallowing outcomes at UIHC for oropharynx and larynx cancer patients treated with newer radiation techniques.