



COVER STORY

Dental disease before radiotherapy in patients with head and neck cancer

Clinical Registry of Dental Outcomes in Head and Neck Cancer Patients

Michael T. Brennan, DDS, MHS; Nathaniel S. Treister, DMD, DMSc; Thomas P. Sollecito, DMD; Brian L. Schmidt, DDS, MD, PhD; Lauren L. Patton, DDS; Kusha Mohammadi, MS; Leslie Long Simpson, BS; Helen Voelker, BA; James S. Hodges, PhD; Rajesh V. Lalla, DDS, PhD

More than 63,000 new diagnoses of head and neck cancer (HNC) of the oral cavity, pharynx, or larynx occur in the United States with 13,360 estimated deaths each year.¹ The 5-year survival rate is approximately 64% for the oral cavity and pharynx, and 61% for the larynx.¹ Treatment of HNC is often multimodal, including surgical resection, chemotherapy, or radiation therapy (RT). Most (50% to 60%) HNC cases have

metastasized to lymph nodes or distant sites at the time of diagnosis, with the more advanced stages of HNC treated with RT and concurrent radiosensitizing chemotherapy.²

ABSTRACT

Background. No evidence-based guidelines exist for preventive dental care before radiation therapy (RT) in patients with head and neck cancer (HNC). An ongoing multicenter, prospective cohort study, Clinical Registry of Dental Outcomes in Head and Neck Cancer Patients (OraRad), is addressing this knowledge gap. The authors evaluated the level of dental disease before RT in the OraRad cohort, factors associated with dental disease, and dental treatment recommendations made before RT.

Methods. As part of OraRad, the authors assessed caries, periodontal disease, dental recommendations, and dental interventions performed before RT.

Results. Baseline measures were reported for 356 participants (77% men) with mean (standard deviation) age of 59.9 (11.0) years. Measures included mean number of teeth (22.9), participants with at least 1 tooth with caries (37.2%), and participants with at least 1 tooth with probing depth 5 millimeters or greater (47.4%). Factors associated with less extensive dental disease before RT included having at least a high school diploma, having dental insurance, history of routine dental care, and a smaller tumor size (T1 or T2). Based on the dental examination before RT, 163 (49.5%) participants had dental treatment recommended before RT, with extractions recommended most frequently.

Conclusion. Many patients with HCN require dental treatment before RT; more than one-third require extractions.

Practical Implications. Most patients have some level of dental disease at the start of RT, indicating the importance of dental evaluation before RT. By observing dental outcomes after RT, OraRad has the potential to determine the best dental treatment recommendations for patients with HCN.

Key Words. Radiation therapy; dentistry; caries; periodontal diseases; head and neck neoplasms.

JADA 2017;148(12):868-877

The study protocol was registered at ClinicalTrials.gov (NCT02057510).
<http://dx.doi.org/10.1016/j.adaj.2017.09.011>



This article has an accompanying online continuing education activity available at: <http://jada.ada.org/ce/home>.

Copyright © 2017 American Dental Association. All rights reserved.

The goal of cancer therapy is to eliminate rapidly dividing cancer cells while sparing noncancerous tissue. Despite advances in cancer therapy, numerous short- and long-term head and neck side effects occur in patients with HNC whose care is managed with RT and concurrent radiosensitizing chemotherapy. Short-term manifestations include mucositis, taste changes, infections, pain, and xerostomia. Long-term manifestations are often irreversible and include limited mouth opening (trismus), taste changes, mucosal pain, secondary cancers, salivary dysfunction, caries, and osteoradionecrosis (ORN).³⁻⁶ Oral manifestations contribute to disability, increased costs, and a diminished quality of life.^{4,7,8} It has been suggested that efforts to minimize the long-term manifestations of caries and ORN may be minimized with appropriate dental care before RT.²

Despite efforts to reduce risk of developing oral complications, no standard of care (SOC) exists for preventive dental care before RT in patients with HCN.⁹ To address this lack of standard dental treatment recommendations before RT, a multicenter, prospective cohort study was established: Clinical Registry of Dental Outcomes in Head and Neck Cancer Patients (OraRad).

In this article, we report the results of our study of the level of dental disease in a population of OraRad patients with HCN immediately before the start of RT. We also describe factors associated with dental diseases seen in the study population and summarize treatment recommendations which precede RT.

METHODS

Study design. OraRad is an ongoing multicenter, clinical registry of patients with HCN at 6 clinical centers: Brigham and Women's Hospital (BWH), University of Pennsylvania (UPenn), Carolinas Medical Center (CMC), University of Connecticut (UConn) Health in Farmington, New York University (NYU), and University of North Carolina at Chapel Hill.¹⁰ We requested and received institutional review board approval at all enrollment sites. We enrolled participants who consented to be included in our study before they began RT. Patients were eligible if they

- were 18 years or older;
- had a diagnosis of head and neck squamous cell carcinoma (SCC) or a salivary gland cancer (SGC) or with a non-SCC or non-SGC malignancy of the head and neck region and were receiving curative RT of at least 4,500 centigray to the head and neck region;
- had at least 1 natural tooth remaining after dental extractions before RT;
- had no prior curative RT.

We documented dental disease characteristics and performed dental interventions before RT. We followed each participant at 6-month intervals for 2 years, beginning 6 months after the start of RT. At each

follow-up visit, we performed a detailed, standardized oral and dental assessment.

Baseline procedures. We collected baseline characteristics including demographics (sex, age, race, ethnicity, highest grade of school completed, insurance status), cancer characteristics (type, location, tumor-node-metastasis classification), radiation dose and location and chemotherapy used, oral hygiene status (routine dental care, frequency of toothbrushing and flossing, health of gingivae, and use of supplemental fluoride), and dental disease characteristics, including caries and periodontal assessment.

The goal of our baseline dental examination was to document the presence and severity of dental disease immediately before the start of RT. The baseline visit was scheduled before RT, after the SOC dental evaluation before RT, and after any recommended dental treatment (for example, extractions) were completed. The baseline before RT visit was not limited to before induction chemotherapy. After induction chemotherapy was acceptable. Dental treatment recommended before RT, whether recommended treatment was completed, and if not completed before the start of RT, whether it was eventually completed was documented.

Calibrated examiners completed the baseline dental examinations of participants and all participants had a recent (within 6 months of the examination) panoramic radiograph available. Examiners collected these dental disease characteristics for each participant at baseline: number of teeth; decayed, missing, and filled surfaces (DMFS); clinical attachment level (CAL); probing depth; bleeding on probing at 6 sites per tooth; plaque index at 6 sites on Ramfjord index teeth; tooth mobility (grade 0 = no or physiologic mobility, grade 1 = up to 1 millimeter [mm] buccolingual (B-L) direction, grade 2 = 2 mm B-L direction, and grade 3 = more than 2 mm B-L direction or depressible); furcation involvement (grade 0 = none, grade 1 = early, grade 2 = probe penetrates between the roots, grade 3 = probe passes completely underneath crown, and grade 4 = supragingival grade 3 involvement); and radiographic findings of dental implants, impacted teeth, and periapical radiolucencies.¹⁰ The dental treatment recommended was based on each site's SOC radiographic and dental examination. Examiners documented the recommended treatment completed before the start of RT.

ABBREVIATION KEY. B-L: Buccolingual. BWH: Brigham and Women's Hospital. CAL: Clinical attachment level. CMC: Carolinas Medical Center. DMFS: Decayed, missing, and filled surfaces. HNC: Head and neck cancer. N: Node. NYU: New York University. OraRad: Clinical Registry of Dental Outcomes in Head and Neck Cancer Patients. ORN: Osteoradionecrosis. RT: Radiation therapy. SCC: Squamous cell carcinoma. SGC: Salivary gland cancer. SOC: Standard of care. UConn: University of Connecticut. UPenn: University of Pennsylvania.

Download English Version:

<https://daneshyari.com/en/article/8698425>

Download Persian Version:

<https://daneshyari.com/article/8698425>

[Daneshyari.com](https://daneshyari.com)