



# News Release

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## **Chemoradiation may increase survival for a subset of elderly head and neck cancer patients**

*Findings update historical data demonstrating no benefit of this combined therapy for patients older than 70 years*

SCOTTSDALE, Ariz., February 18, 2016—The addition of chemotherapy (CT) to radiation therapy (RT) improves survival rates among a subset of elderly head and neck cancer patients, specifically those ages 71 to 79 with low comorbidity scores and advanced disease stage, according to research presented at the 2016 Multidisciplinary Head and Neck Cancer Symposium.

Drawing on nationwide population-based data, the study demonstrated a survival benefit of chemoradiation therapy (CRT) similar to that for younger head and neck squamous cell carcinoma (HNSCC) patients among septuagenarians with limited comorbidity and later stage disease. CRT did not predict survival improvement in patients age 80 and above or those with earlier stage disease or multiple comorbidities.

While previous research has demonstrated the efficacy of combining concomitant CT with RT to improve survival for HNSCC patients, this improvement has not been shown in patients older

than 70 years. In particular, a 2009 meta-analysis of 16,485 patients in 87 randomized trials found that benefits of CRT for locally-advanced HNSCC decreased with age and concluded no overall survival (OS) benefit for patients age 71 and above. Patients in this age range totaled only four percent of the population in this meta-analysis, however, while individuals age 71 and above accounted for more than nine percent of the 2010 U.S. Census.

“Elderly patients have been underrepresented in prospective clinical trials that have defined standards of care for head and neck cancer,” said Sana Karam, MD, PhD, an assistant professor of radiation oncology at the University of Colorado School of Medicine in Aurora, Colorado, and senior author on the study. “Our study drew on nationwide data to assess more comprehensively how combined therapy impacts this population.”

The authors queried the National Cancer Data Base (NCDB) for records of patients older than 70 years who were treated for non-metastatic oropharyngeal, laryngeal and hypopharyngeal cancers between 1998 and 2011. The NCDB is a jointly-sponsored project of the American College of Surgeons and the American Cancer Society that aggregates data from more than 1,500 facilities accredited by the Commission on Cancer. Cases were divided into two groups based on whether or not patients received CT concurrent with RT. All patients received definitive RT (66.0-81.6 Gy in 1.2-2.0 Gy fractions), and concurrent chemoradiation was defined as beginning a course of CT within 14 days of RT start.

Sixty-eight percent of the patients received RT alone, and 32 percent received CRT. Multivariate and propensity-score-matched analyses were used to compare OS outcomes between the cohorts, and researchers conducted recursive partitioning analysis based on OS to examine differences associated with age, Charlson comorbidity score, T-stage and N-stage.

Compared to RT alone, CRT was associated with improved survival following HNSCC in patients age 79 and younger (Hazard Ratio (HR), 0.80;  $p = 0.001$ ), with comorbidity scores of zero or one (HR, 0.84;  $p = 0.002$ ), and advanced disease stage (i.e., either T1-2/N2-3 or T3-4/N0-3 disease (HR, 0.77;  $p < 0.001$ )). Findings also demonstrated an OS benefit of CRT for patients treated with intensity modulated RT (HR, 0.76;  $p = 0.002$ ).

Patients who did not see an OS benefit from CRT tended to be age 79 or older (HR, 0.93,  $p = 0.368$ ), had a comorbidity score of two or greater (HR, 1.00,  $p = 0.992$ ), presented with T-stage I or II disease (HR, 1.09,  $p = 0.448$ ), or were treated with three-dimensional RT (HR, 1.02,  $p = 0.923$ ). Patients age 79 or older with multiple comorbidities trended toward worse OS with CRT, though the difference was only marginally significant (HR, 2.36;  $p = 0.080$ ).

Findings may aid clinicians in discussing treatment options with their elderly HNSCC patients. Moreover, results of this study could guide future prospective trials to confirm the benefit of multimodality treatment in elderly patients, not only for head and neck cancer but for other cancer sites, as well.

“Because the toxicity of concurrent chemoradiation is greater than radiation alone for definitive HNSCC treatment, many clinicians have reservations about offering CRT for elderly head and neck cancer patients,” said Dr. Karam. “However, in the era of improved radiation techniques, improved systemic therapy and better supportive care, we find that CRT does, in fact, improve survival for a large segment of this population.”

The abstract, “Does Age Matter? Survival Outcomes with the Addition of Concurrent Chemotherapy for Elderly Head and Neck Cancer Patients Undergoing Definitive Radiation Using the National Cancer Data Base,” will be presented in detail as a poster presentation at the 2016 Multidisciplinary Head and Neck Cancer Symposium in Scottsdale, Arizona. To speak with Dr. Karam, contact the ASTRO media relations team at 480-905-7935 (February 18-19 only), 703-286-1600 or [press@astro.org](mailto:press@astro.org).

The 2016 Multidisciplinary Head and Neck Cancer Symposium is sponsored by the American Society for Radiation Oncology (ASTRO), the American Society of Clinical Oncology (ASCO) and the American Head & Neck Society (AHNS). The two-and-a-half day meeting includes interactive educational sessions focused on topics such as novel multidisciplinary therapies, directed therapy, treatment guidelines, prevention, surveillance and supportive care, as well as 13 oral abstract presentations of the current science of relevance to the head and neck cancer community. A total of 262 abstracts will be presented, including 249 posters. Keynote speakers include Tanguy Seiwert,

MD, of the University of Chicago, to present “Immunotherapy for Head and Neck Cancer;” Robert I. Haddad, MD, of Brigham and Women’s Hospital, to present “Personalized Treatment for Head and Neck Cancer -- The Time is Now;” Quynh-Thu Le, MD, FASTRO, of the Stanford School of Medicine, to present “Precision Therapy in Head and Neck Cancer -- From Technology to Biomarker-based Risk Stratification;” and Neil Hayes, MD, MPH, of the UNC School of Medicine, to present “Genome Atlas and Sequencing Data: How We Use This Going Forward.”

#### **ABOUT ASTRO**

*ASTRO is the premier radiation oncology society in the world, with more than 10,000 members who are physicians, nurses, biologists, physicists, radiation therapists, dosimetrists and other health care professionals who specialize in treating patients with radiation therapies. As the leading organization in radiation oncology, the Society is dedicated to improving patient care through professional education and training, support for clinical practice and health policy standards, advancement of science and research, and advocacy. ASTRO publishes three medical journals, International Journal of Radiation Oncology • Biology • Physics ([www.redjournal.org](http://www.redjournal.org)), Practical Radiation Oncology ([www.practicalradonc.org](http://www.practicalradonc.org)) and Advances in Radiation Oncology ([www.advancesradonc.org](http://www.advancesradonc.org)); developed and maintains an extensive patient website, RT Answers (<http://www.rtanswers.org>); and created the Radiation Oncology Institute ([www.roinstitute.org](http://www.roinstitute.org)), a nonprofit foundation to support research and education efforts around the world that enhance and confirm the critical role of radiation therapy in improving cancer treatment. To learn more about ASTRO, visit [www.astro.org](http://www.astro.org).*

#### **ABOUT ASCO**

*Founded in 1964, the American Society of Clinical Oncology (ASCO) is the world’s leading professional organization representing physicians who care for people with cancer. With nearly 40,000 members, ASCO is committed to improving cancer care through scientific meetings, educational programs and peer-reviewed journals. ASCO is supported by its affiliate organization, the Conquer Cancer Foundation, which funds ground-breaking research and programs that make a tangible difference in the lives of people with cancer. For ASCO information and resources, visit [www.asco.org](http://www.asco.org). Patient-oriented cancer information is available at [www.cancer.net](http://www.cancer.net).*

#### **ABOUT AHNS**

*The American Head & Neck Society (AHNS) is the single largest organization in North America for the advancement of research and education in head and neck oncology. The mission of the American Head and Neck Society is: to promote and advance the knowledge of prevention, diagnosis, treatment, and rehabilitation of neoplasms and other diseases of the head and neck; to promote and advance research in diseases of the head and neck, and; to promote and advance the highest professional and ethical standards. For more information, visit [www.ahns.info](http://www.ahns.info).*

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**2016 Multidisciplinary Head and Neck Cancer Symposium  
News Briefing, Thursday, February 18, 2016, 7:00 a.m., MT**

Poster Session: Thursday, February 18, 2016, 5:30 – 6:30 p.m., MT, Arizona Ballroom H-N, JW Marriott Camelback Resort and Spa

**100 Does Age Matter? Survival Outcomes with the Addition of Concurrent Chemotherapy for Elderly Head and Neck Cancer Patients Undergoing Definitive Radiation Using the National Cancer Data Base**

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**Purpose/Objective(s):** The addition of chemotherapy to radiation (CRT) for head and neck squamous cell carcinomas (HNSCC) improves overall survival (OS) compared to radiation (RT) alone; however, the Pignon meta-analysis of over 17,000 patients demonstrated no OS benefit in patients > 70 yrs. Because of this, many elderly patients receive RT alone. Using a nationwide database, this study examines the outcomes of elderly patients receiving CRT vs. RT alone.

**Materials/Methods:** The National Cancer Data Base (NCDB) was queried for patients > 70 yrs with non-metastatic oropharynx, larynx, and hypopharynx cancers treated from 1998-2011. Patients received definitive RT (66-81.6 Gy in 1.2-2.0 Gy fractions); CRT was defined as chemotherapy start within 14 days of RT start. Multivariate (MVA) and propensity score-matched (PSM) analyses were performed to compare OS outcomes. Recursive partitioning analysis (RPA) based on OS using age, Charlson comorbidity score, T-stage, and N-stage was also performed.

**Results:** 5,265 patients were included: 3,604 (68%) received RT alone, 1,661 (32%) received CRT. Median follow up was 31 mo (2-181 mo). Median age of patients undergoing RT alone was 77 yrs (71-90 yrs); median age of CRT patients was 75 yrs (71-90 yrs). When accounting for age, gender, race, median county household income, % without a high school diploma, comorbidity index, facility, tumor site, T-stage, and N-stage, CRT improved OS under MVA (HR, 0.84; 95% CI, 0.76-0.94;  $p=0.002$ ) and PSM analyses (HR, 0.86; 95% CI, 0.76-0.98;  $p=0.022$ ) compared to RT alone. On subgroup analysis, patients ages < 79 yrs (HR, 0.80;  $p=0.001$ ), those with a comorbidity score of 0-1 (HR, 0.84;  $p=0.002$ ), stage III/IV disease (HR, 0.77;  $p<0.001$ ), and treatment with intensity modulated RT (HR, 0.76;  $p=0.002$ ) had an OS benefit with CRT under MVA. The addition of chemotherapy in patients  $\geq 79$  yrs (HR, 0.93;  $p=0.368$ ), those with a comorbidity score of  $\geq 2$  (HR, 1.00;  $p=0.992$ ), stage I/II disease (HR, 1.09;  $p=0.448$ ), and treatment with three-dimensional RT (HR, 1.02;  $p=0.923$ ) did not improve OS. RPA showed patients < 79 yrs presenting with T3-4, any N, and a comorbidity score of 0 had an OS improvement with CRT vs. RT alone; all others including patients  $\geq 79$  yrs did not have an OS benefit with CRT. Patients  $\geq 79$  yrs with a comorbidity score  $\geq 2$  had a trend for worse OS with CRT (HR, 2.36;  $p=0.080$ ).

**Conclusion:** Patients < 79 yrs with low comorbidity scores with T3/T4, any N-stage disease, appear to have an improvement in OS with CRT vs. RT alone within the NCDB. CRT had worse OS in those  $\geq 79$  yrs with poor comorbidity scores. In summary, patients > 70 yrs should not be denied concurrent chemotherapy based solely on age; additional factors ought to be accounted for.

**Author Disclosures:** A. Amini: None. B. Jones: None. J. McDermott: None. A. Jimeno: None. D.W. Bowles: None. D. Raben: None. S. Karam: None.