HPV-positive squamous cell carcinoma of the oropharynx patients experience distant metastases after initial treatment at a later date, in more subsites and in more atypical sites compared to HPV-negative patients

Scottsdale, Ariz., February 20, 2014—Patients with HPV-positive squamous cell carcinoma of the oropharynx (SCCOP) had a longer time to development of distant metastasis (DM) after initial treatment, and had more metastatic sites in more atypical locations compared to HPV-negative patients, according to research presented today at the 2014 Multidisciplinary Head and Neck Cancer Symposium.

Culled from records of an IRB-approved registry, the study reviewed 285 patients with stage III-IV SCCOP (originally thought to be a smoking-related head and neck cancer) treated with chemotherapy and radiation from 2002 to 2013. HPV status was determined by in situ hybridization for HPV DNA and/or by strong and diffuse (>75 percent) staining for p16 immunohistochemistry. There were 245 HPV-positive and 40 HPV-negative patients.

Twenty-seven HPV-positive and eight HPV-negative patients failed with DM and were the subjects for more detailed evaluation. Radiation therapy (RT) was either 3-D RT (HPV-positive = 15/27; HPV-negative = 4/8) or intensity modulated radiation therapy (IMRT) (HPV-positive = 12/27; HPV-negative = 4/8) with doses from 66-79 Gy. Patients received concurrent chemotherapy of cisplatin (HPV-positive = 9/27; HPV-negative = 2/8), cisplatin/5 fluorouracil (FU) (HPV-positive = 7/27; HPV-negative = 0/8).
10/27; HPV-negative = 3/8) or cetuximab (HPV-positive = 8/27; HPV-negative = 2/8). One HPV-negative patient received cisplatin/paclitaxel chemotherapy. One patient in each group was treated with adjuvant chemoradiotherapy after initial resection. Student t-tests were used to compare the difference between the means of the samples.

Both HPV-positive and HPV-negative patients were found to have similar rates of DM, however the mean time to develop DM was significantly longer for HPV-positive patients (HPV-positive = 21.6 months vs. HPV-negative = 7.0 months). The most common sites of metastasis for all patients were the lung (HPV-positive = 17/27 vs. HPV-negative = 5/8) and bone (HPV-positive = 12/27 vs. HPV-negative = 2/8). The average number of metastatic subsites was significantly higher for HPV-positive patients (HPV-positive = 2.0 vs. HPV-negative = 1.1, p = 0.026). Twenty-one of 27 HPV-positive patients had more than one metastatic deposit, and 12/27 had DM involving more than one organ system, compared to only 1/8 for HPV-negative patients. Metastases in less typical sites were more common in HPV-positive patients; sites included the liver (6), intra-abdominal lymph nodes (3), brain (2), pleura (2) and peritoneum (1). Locoregional failure (metastases in the original tumor region) was only seen in four of the 27 HPV-positive patients, compared to three of the eight HPV-negative patients.

“The late onset of DM in HPV-positive patients (almost two years) is unusual since the majority of aerodigestive tract malignancies tend to recur within 12-18 months of definitive treatment. The multiple and varied DM sites, which can present as distal localized pain, indicates that we may need to be more aggressive in working up suspicions for metastatic disease and that imaging such as PET/CT scans may be warranted even several years after treatment,” said Samuel Trosman, MD, a resident in otolaryngology at the Cleveland Clinic. “We were able to learn significant characteristics of HPV-positive SCCOP that will help us provide more tailored care and surveillance strategies for these patients.”

The abstract, “Distant Metastatic Failure Patterns in Squamous Cell Cancer of the Oropharynx (SCCOP) Treated with Chemoradiation: the Impact of Human Papillomavirus,” will be presented in detail as a poster presentation at the 2014 Multidisciplinary Head and Neck Cancer Symposium. To
speak with Dr. Trosman, contact Michelle Kirkwood on February 20 – 21, 2014 in the ASTRO Press Office at the JW Marriott Camelback Inn Resort and Spa in Scottsdale, Arizona at 480-596-7085 or email michellek@astro.org.

The 2014 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 supportive care, directed therapy, new surgical and radiotherapeutic techniques, as well as 12 oral abstract presentations of the current science of relevance to the head and neck cancer community. A total of 189 abstracts will be presented including 177 posters. Keynote speakers include Jennifer Grandis, MD, of the University of Pittsburgh, to present “The Molecular Road to Defining and Targeting High-risk Head and Neck Patients;” and Julia H. Rowland, PhD, of the National Cancer Institute, to present “Cancer Survivorship: Research Opportunities on the Path to Where We Want to Be.”

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Poster Presentation: Arizona Ballroom H-N, JW Marriott Camelback Inn Resort and Spa

125  Distant Metastatic Failure Patterns in Squamous Cell Cancer of the Oropharynx (SCCOP) Treated with Chemoradiation: the Impact of Human Papillomavirus (HPV)

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Background: HPV initiated (HPV+) SCCOP has a unique epidemiology, biology, and genetic profile compared to HPV-disease and is associated with excellent outcomes after chemoradiation (CRT). Whether there are differences in the patterns and timing of distant metastatic failure in HPV+ disease is unclear.

Methods and Materials: We reviewed 285 patients with stage III-IV SCCOP treated with CRT between 2002-2013 from an IRB approved registry. 27/245 HPV+ and 8/40 HPV- adult patients (pts) who failed with distant metastases (DM) were identified. HPV positivity was determined by in situ hybridization for HPV DNA and/or by strong and diffuse (>75%) staining for p16 immunohistochemistry. RT was performed using either 3DRT (15/27 HPV+, 4/8 HPV-) or IMRT (12/27 HPV+, 4/8 HPV-) with doses from 66-79 Gy. Concurrent chemotherapy was given with cisplatin (9/27 HPV+, 2/8 HPV-), cisplatin/5FU (10/27 HPV+, 3/8 HPV-), or cetuximab (8/27 HPV+, 2/8 HPV-). One HPV- patient received chemotherapy with cisplatin/paclitaxel. One patient in each group was treated with adjuvant CRT after initial resection. Student t-tests were used to compare the differences between the means of the samples.

Results: While the DM rate for HPV+ vs. HPV- SCCOP was similar (11% vs. 20%), the mean time to develop DM was significantly longer after the completion of treatment for HPV+ pts (21.6 months, range 2.7-79.8) than for HPV- pts (7.0 months, range 2.1-14.4; p=0.03). The most common site of metastasis in both HPV+ and HPV- patients was the lung (17/27 HPV+, 5/8 HPV-) followed by bone (12/27 HPV+, 2/8 HPV-). The average number of metastatic subsites involved was significantly higher for HPV+ pts than HPV- pts (2.0 vs. 1.1; p = 0.026). Of the HPV+ pts, 21/27 (78%) presented with >1 metastatic deposit, and 12/27 (44%) had DM involving >1 organ system, compared to only 1/8 (12.5%) HPV-pts. Dissemination to less typical metastatic sites was common in HPV+ pts, including liver (6), intra-abdominal lymph nodes (3), brain (2), pleura (2), and peritoneum (1). Only 4/27 (15%) HPV+ pts also had locoregional failure at any point during their post-treatment course vs. 3/8 (38%) HPV- pts.

Conclusions: While the rates of DM appear similar between pts with HPV+ and HPV- SCCOP treated with CRT, DM occur significantly later and involves more subsites in the HPV+ group. HPV+ DM failure appears to more frequently involve sites that are atypical for smoking related head and neck cancer. DM disease in HPV+ SCCOP has unique characteristics and a unique natural history that may require alternative treatment strategies.