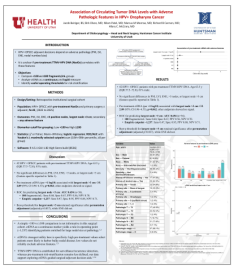
Head and Neck Surgery



(A510) Association of Circulating Tumor DNA Levels with Adverse Pathologic Features in HPV + Oropharynx Cancer

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Introduction: Adverse pathologic features, including perineural invasion (PNI), lymphovascular invasion (LVI), multiple positive lymph nodes, and extranodal extension (ENE) are indications for adjuvant therapy after surgical resection of human papillomavirus (HPV) positive oropharyngeal squamous cell carcinoma (HPV+ OPSCC). Circulating tumor DNA (ctDNA) is a quantitative biomarker that may have prognostic value in HPV+ OPSCC, however this remains to be established.

Methods: At a single institution between January 2021 – November 2023, ctDNA was measured via NavDx ® blood collections for patients with HPV + OPSCC undergoing definitive surgical treatment +/- adjuvant radiotherapy or adjuvant chemoradiotherapy. ctDNA was measured at the time of diagnosis prior to treatment initiation. Data was collected retrospectively and included demographics, medical comorbidities, and tumor characteristics. A Chi-square was used as a test of significance.

Results: Between January 2021-November 2023, there were 26 HPV+ OPSCC with pre-treatment ctDNA values treated with definitive surgery. Patients were divided into low pre-treatment ctDNA level (n=16) and high pre-treatment ctDNA level (n=10) groups based on ctDNA levels < or > 100 tumor tissue modified viral (TTMV)-HPV DNA fragments per milliliter of plasma, respectively. Patients were found to have fewer adverse pathologic features when comparing the low to the high pre-treatment ctDNA groups, including PNI (0.13 vs 0.30, p=0.32), LVI (0.06 vs 0.20, p=0.31), ENE (0.19 vs 0.20, p=0.94), >3 positive nodes (0.38 vs 0.50, p=0.63), and nodes > 3 cm (0.31 vs 0.50, p=0.45).

Conclusions: Although these differences are statistically insignificant within a small cohort, this pattern of fewer adverse features in patients with low pre-treatment ctDNA may suggest utility for pre-operative ctDNA risk stratification among patients with HPV+ OPSCC.