

Human Papillomavirus Testing in Metastatic Squamous Cell Carcinoma of Unknown Primary Using PCR on Fine-Needle Aspiration Smears: A Prospective Clinical Study

ANNE FOG LOMHOLT (1,4), HI CHANNIR (1), TA GERDS (2), BW CHARABI (1,4), K KISS, MD (3), C VON BUCHWALD (1,4)

1. Department of Otorhinolaryngology, Head and Neck Surgery and Audiology, Rigshospitalet, Copenhagen University Hospital, Denmark
2. Department of Biostatistics Copenhagen, University of Copenhagen, Denmark
3. Department of Pathology, Rigshospitalet, Copenhagen University Hospital, Denmark
4. Department of Clinical Medicine, University of Copenhagen, Denmark

Background:

Squamous cell carcinoma metastasis of the head and neck with unknown primary tumor (CUP) comprise a diagnostic challenge. Human papillomavirus (HPV) testing on cytologic specimens is gaining increasing focus as this may facilitate an early diagnosis of HPV-induced oropharyngeal primary tumor. In this study we aimed to assess HPV-DNA testing on FNA smears in a prospective clinical study.

Methods:

Patients referred to a tertiary Head and Neck Cancer Centre with suspected CUP were included from November 2016 - November 2018. Scraped cell material from FNA smears was analyzed for HPV-DNA and correlated with the origin of the primary tumor (oropharynx vs. outside oropharynx). The turn-around time reflecting the work-flow for HPV-DNA testing was also calculated.

Results:

The sensitivity and specificity were 86.7% and 92.0% and the positive and negative predictive values were 96.3% and 74.2%, respectively. The turn-around time for HPV testing on the cytological specimen was 4 calendar days (median).

Conclusions:

HPV-DNA testing on FNA smears can be performed within a reasonable timeframe and guide the detection of oropharyngeal primary tumors in the clinical setting for patients presenting with CUP in the head and neck.