

Lab 2 Written Questions

1. What are the goals of the research described in the paper?

The study aimed to evaluate how sex, race/ethnicity, and tumor HPV status affect prognosis (overall survival) among patients with head and neck squamous cell carcinoma (HNSCC), comparing oropharyngeal (OPSCC) and non-oropharyngeal (non-OP) sites. Because prior studies were mostly done in white males, the authors specifically oversampled women and non-white groups to better understand survival differences across subpopulations.

2. What are the major conclusions of the paper?

For OPSCC, HPV-positive tumors had much better survival than HPV-negative ones. Even after adjusting for HPV status, women had better outcomes than men.

For non-OP HNSCC, HPV and p16 status had no prognostic value—sex and race were not significant once other factors were controlled.

Therefore, the prognostic role of HPV is restricted to OPSCC.

3. How did the authors determine HPV status?

They used a multi-step algorithm: p16 immunohistochemistry (IHC); HPV16 DNA in situ hybridization (ISH). If discordant (p16 positive but HPV16 negative), they used RNA ISH for high-risk HPV E6/E7 mRNA.

4. The paper says “Tumors were centrally tested” A. What does this mean? B. Why did they do this? C. Why do they tell us this?

A. All tumor samples from different hospitals were tested at one central laboratory using the same standardized procedures in 2014-2015, and interpreted by one pathologist. (W.H.W.)

B. To ensure consistency and reliability. Interpreting p16 staining is subjective, and differs from different labs using different reagents, which could lead to different results. Central testing minimizes inter-lab variability and human interpretation bias.

C. To increase confidence in their findings and demonstrate methodological rigor and ensure the observed differences in survival are not due to inconsistent testing.

5. The paper says “Given this result, we recommend that patients with non-OP HNSCCs not be routinely tested for p16 or HPV because a positive test result cannot be contextualized.” Why do the authors recommend against testing for patients with non-OP HNSCCs?

Because in non-oro-pharyngeal cancers, neither HPV nor p16 expression predicted survival.

A positive test result would not change clinical management and has no clear meaning, it may reflect unrelated cellular mechanisms rather than HPV infection.