Background
Human Papillomavirus driven Oropharyngeal Cancer (HPV-OPC) incidence is increasing globally [1]. However, currently, there are no early detection methods [2]. Furthermore, there are no established prognostic markers in addition to tumor p16 [3].

Methods
HR-HPV types were detected in 72.4% of the OPC patients. The vast majority of them had tonsillar and base of tongue (BOT) tumors (Figure 1). The most common type was HPV 16 (92.3%) followed by other HR-HPV types such as 33, 35, and 18. Tumor p16 was observed to be overexpressed in 89.3% of OPC patients (Table 01).

Objective
To evaluate the clinical utility of salivary High-risk HPV (HR-HPV) as a biomarker for HPV-OPC, the study investigated baseline salivary HR-HPV positivity in OPC patients and its association with OPC prognosis.

Results
HR-HPV types were detected in 72.4% of the OPC patients. The vast majority of them had tonsillar and base of tongue (BOT) tumors (Figure 1). The most common type was HPV 16 (92.3%) followed by other HR-HPV types such as 33, 35, and 18. Tumor p16 was observed to be overexpressed in 89.3% of OPC patients (Table 01).

Salivary HR-HPV positive OPC patients experienced a prognostic advantage over salivary HPV-negative OPC patients (HR: 0.39; 95% CI, 0.18 – 0.86, p = 0.019) (Figure 02-A). Tumour P16 was also able to independently determine patient prognosis (HR: 0.25; 95% CI, 0.10 – 0.60, p = 0.002) (Figure 02-B). Furthermore, AJCC staging (8th Edition) based on TNM staging and tumor p16 had a good correlation with OPC survival (p < 0.001).

A three-group comparison was performed between salivary HR-HPV and tumour p16 positive group (salivary HR-HPV+/p16+), salivary HR-HPV negative tumour p16 positive group (salivary HR-HPV-/p16+), and salivary HR-HPV and tumour p16 negative group (salivary HR-HPV+/p16-) (Figure 02-C). A statistically significant difference in survival patterns was observed between salivary HR-HPV+/p16+ group and salivary HR-HPV+/p16+ group (HR: 4.14; 95% CI, 1.67 – 10.27, P = .002) but not between salivary HR-HPV-/p16- group and salivary HR-HPV+/p16+ group (HR: 3.28; 95% CI, 0.85 – 12.71, P = .085). Furthermore, Kaplan Meier analysis revealed that salivary HR-HPV+/p16+ patients tend to experience late events compared to salivary HR-HPV-/p16+ patients. (Figure 02-C).

Conclusion
This study highlights that salivary HR-HPV can be detected in the vast majority of HPV-OPC patients at diagnosis indicating its capability of assisting HPV-OPC diagnosis. Furthermore, salivary HR-HPV testing can add value in OPC prognostication.

References

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