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Role of HPV in the pathogenesis of HNSCC

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OBJECTIVES

Aim of this study are

1. to analyze prevalence and distribution of HPV in Squamous Cell Carcinomas of the Head and Neck, for better therapeutic and prognostic management of the patient;
2. study the prevalence of HPV also in potentially malignant lesions (PMD) of the head and neck area, to be able to make increasingly early diagnoses;
3. identify the presence of the virus that is causative - oncogenic and not simply episomic HPV DNA

METHODS

SITE	
ORAL CAVITY	29.5%
OROPHARYNX	32.7%
LARYNX	32.3%
NASAL CAVITY	4.1%
CONJUNCTIVA	0.9%
EAR	0.5%

SEX	
MALE	61.8%
FEMALE	38.2%

DIAGNOSIS	
SQUAMOUS CARCINOMA	25%
POTENTIALLY MALIGNANT LESONS (PMD)	75%

Patients and methods

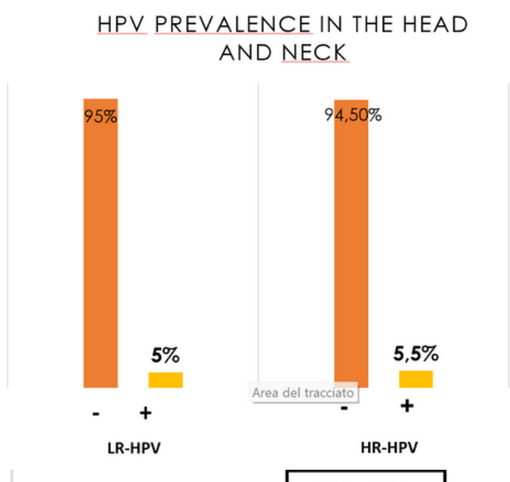
Study includes 220 patients from the HN- department, of which 75% of cases were potentially malignant disease (PD), which include epithelial hyperplasia, verrucous hyperplasia, leukoplakia, dysplasia and in situ carcinomas; furthermore, we analyzed squamous papillomas.

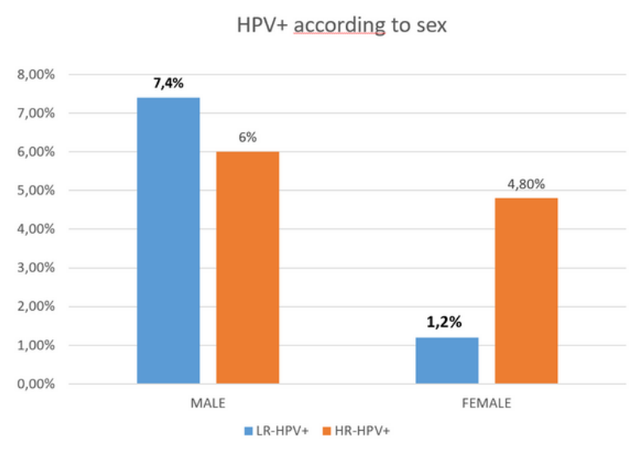
25% of analyzed cases were squamous carcinomas

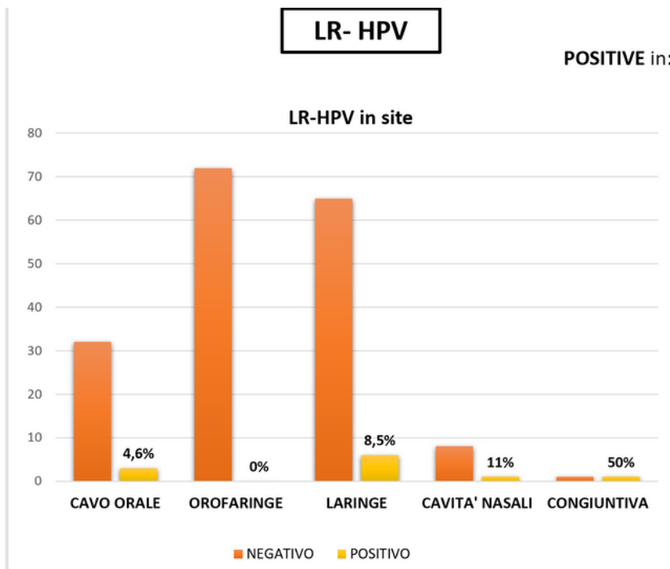
The commercially available Ventana kit includes the following probes for HR-HPVs 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, e 66 (Inform HPV family-III 16 Probe; Ventana - Roche); and the following probes for LR-HPVs, 6, 11 (Inform HPV family- II 6 Probe; Ventana - Roche).

Two sequential 4 micron sections may be used to detect HR-HPV and LR-HPV from formalin fixed-paraffin embedded tissues (FFPE).

GRAPHS & TABLES RESUS



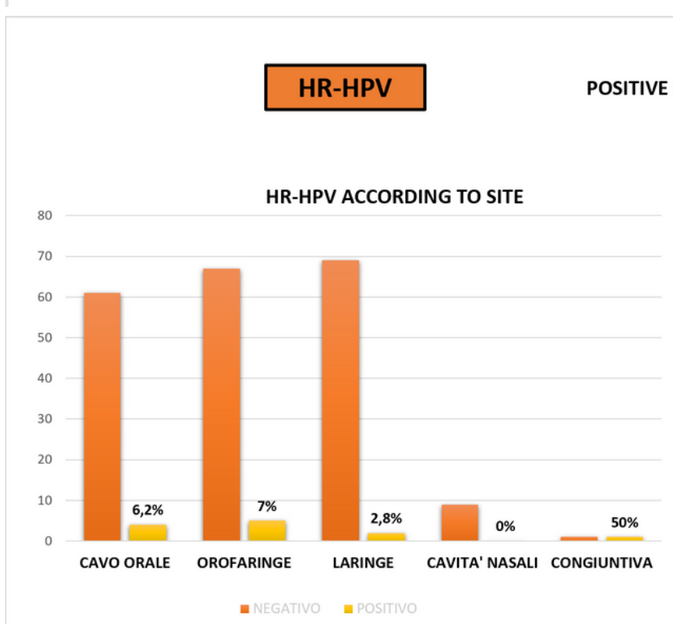




DIAGNOSIS	%
PMD (Potentially malignant disorders)	6,7
Squamous Carcinoma	0

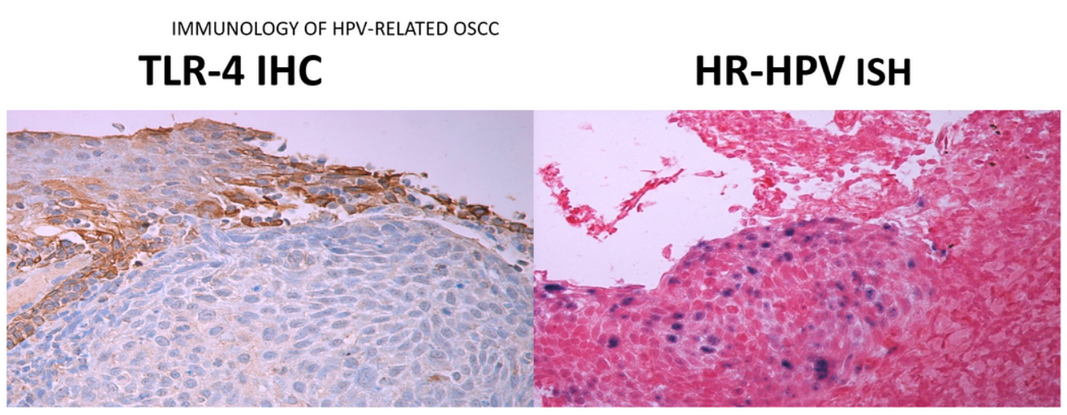
This result confirms that LOW RISK HPV genotypes are not classifiable as carcinogens (IARC)

LR-HPV tested positive in:
- 3/65 oral cavity(4,6%)
- 0/72 oropharynx (0%)
- 6/71 larynx (8,5%)
- 1/9 nasal cavity(11%)
- 1/2 conjunctiva(50%)



DIAGNOSIS	%
PMD (Potentially malignant disorders)	2,6
SQUAMOUS CARCINOMA	11,7

HR-HPV tested positive in:
- 4/65 of the oral cavity (6.2%)
- 5/72 of oropharynx (7%)
- 2/71 of larynx (2.8%)
- 0/9 nasal cavities (0%)
- 1/2 conjunctiva (50%)



Pannone et AL . We identified an oral cancer model with TLR-4 down-regulation and HR-HPV-DNA integration

RESULTS

OVERALL PREVALENCE of LR-HPV in all lesions in the HN-district is 5%.
OVERALL PREVALENCE of HR-HPV was 5.5%, with greater positivity in the male sex.
LR-HPV was not positive in any squamous carcinoma and was positive in 2 out of 22 squamous papillomas.
HR-HPV was found in 2.6% of all PMD malignant disease and in 11.7% of HNSCC.
No cases of squamous laryngeal carcinoma were associated with HPV infection in this coorte as evaluated by ISH.
Prevalence of distribution of LR-HPV in all HN-lesions is 5%.
HR-HPV prevalence is 5.5%, with greater positivity in the male sex.
LR-HPV was not positive in any squamous carcinoma and was positive in 2 out of 22 squamous papillomas.
HR-HPV was found in 2.6% of all potentially malignant disease and in 11.7% of HNSCC.
No cases of squamous laryngeal carcinoma were associated with HPV infection in this coorte as evaluated by ISH.

CONCLUSION

Positive findingof HR-HPVin HNSCCconfirms and strengthens the role of the virus in carcinogenesis and the evidentprevalence of incidence in males. Presenceof HR- HPV in PMDsuggeststhe possibility of setting upless invasive screening for the identification of the virus, to allow the diagnosisof carcinoma in the earlystages and/or prevent progressiontowardsmalignanttransformation.

REFERENCES

A review of human carcinogens--Part B: biological agents. – NCBI. Lancet Oncol. 2009 Apr;10(4):321-2. A review of human carcinogens--Part B: biological agents. Bouvard V, Baan R, Straif K, Grosse Y, Secretan B, El Ghissassi ...