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VIROLOGIA

PREVALENCE OF MUCOSAL AND CUTANEOUS HPV IN KERATINIZING SUBTYPES OF ANOGENITAL SQUAMOUS-CELL CARCINOMAS

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BACKGROUND-AIM

Human papillomaviruses (HPVs) are known to cause warty and dysplastic hyperproliferative lesions of the skin (genus β) and mucosal epithelium (genus α , γ).

Persistent high-risk HPV infection (HR-HPV) is implicated in several squamous cell carcinomas (SCCs), including cervical, anal, vulvar, and penile cancers. In addition, some skin genotypes have been detected in skin cancer.

Histologic parameters, such as keratinization grade, have been studied in association with HPV infection. While a lack of keratinization is positively associated with HPV, the role of the virus in the development of cancers with a high degree of keratinization is not clear.

The aim of this retrospective study was to analyse the overall and type-specific prevalence and distribution of HPV types in keratinizing anogenital SCCs.

METHODS

Specimens, dated from 2007 to 2021, were 45 paraffin-embedded tissue-blocks of anal (16), penile (17) and vulvar (12) keratinizing SCC, obtained from archival material at AOUP P. Giaccone, Palermo. Identification of α -HPV was performed using the INNO-LiPA HPV Genotyping Extra II (Fujirebio), that allows the detection of 32 HPV, of which 23 HR-HPV. Meanwhile, 25 β -HPV were detected using the RHA (β) Skin HPV Genotyping Test (Labo BV Biomedical Products).

RESULTS

Mucosal and cutaneous HPV were detected in 46,7% and 20% of samples, respectively. Anal cancers had the highest HPV positivity rate, 81,3%. Among the mucosal HPVs detected, HR-HPV accounted for 84,6%, with HPV-16 identified as the prevalent type (81.8%). β -HPVs were found in 38,5% of anal carcinoma samples, of which 80% had coinfection with mucosal HPV. HPV-47 and HPV-5, which is involved in oncogenic processes in the skin, were most frequently detected. Penile cancer samples were positive in 52,9% of cases, 100% HR-HPV. Again, HPV-16 was the predominant genotype (77.8%). Only two specimens (22.2%) were positive for cutaneous HPV, specifically HPV-25 and HPV-36, but both cases were coinfections with mucosal types. Only 2,4% of vulvar cancer samples tested positive for HPV skin genotypes. No mucosal genotype was detected.

CONCLUSIONS

Consistent with literature data on the prevalence of HPV in non-keratinizing SCC, our results show that HPV-16 is the most common genotype in both anal and penile keratinizing carcinomas. The detection of β -types, albeit in a small percentage of samples, suggests that the role of these genotypes in the development of anogenital SCC should not be ignored and certainly requires further investigation.