

# Men, the Forgotten Victims for HPV Diagnosis

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## BACKGROUND

In men, high risk (hr) human papillomavirus (HPV) types can induce penile or rectal intraepithelial neoplasias or penile cancer, while low risk (lr) HPV types, may cause genital warts or atypical genital or perigenital lesions.

## AIM OF THE STUDY

A retrospective study to evaluate results of low risk (lr) and high risk (hr) HPV genotyping in male samples.

## STUDY DESIGN

The study was based in the Outpatients' Centre for STI Diagnosis in Vienna. Samples were collected at or sent to the Outpatients Centre for STI Diagnosis in Vienna between January and June 2018.

## PATIENTS AND METHODS

Total number of samples in the first 6 months of 2018: **7032**  
-) 6289 (89.5%) female specimens

-) **735 (10.5%) male specimens**

Male samples collected from the following area:

penile (46%)

perigenital (25.6%)

anorectal (9.5%)

other locations (18.9%)

Samples were tested for HPV by using the **PapilloCheck® (Greiner Bio-One)**, a microarray-based assay for the detection and identification of **18 hr and 6 lr HPV types**, based on the detection, amplification, and genotyping of a 350pb fragment of the viral E1 gene.

Figure 1: HPV results from male specimens (n=735)

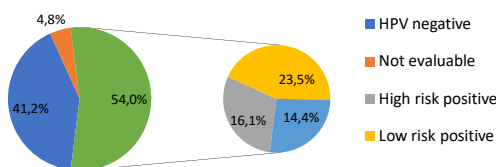


Figure 2: HPV genotyping in detail (n=700)

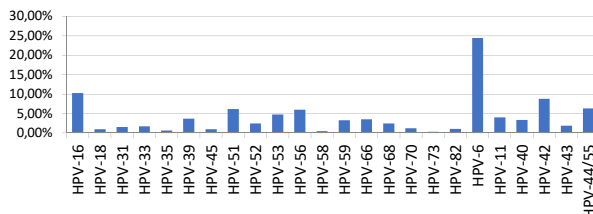
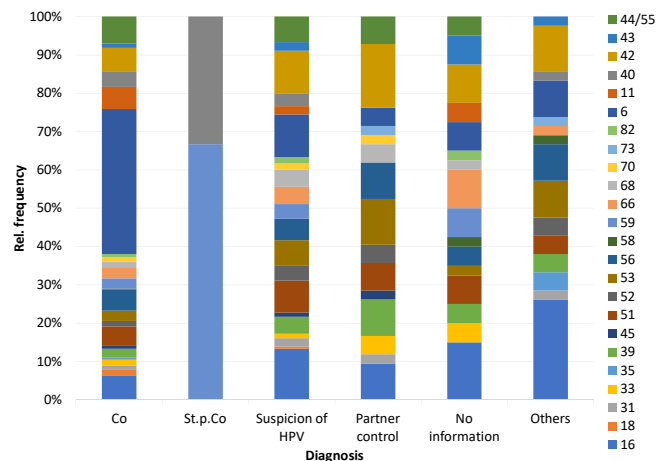


Figure 3: Relative frequency of HPV positive results related to diagnosis



## RESULTS

Indications for HPV testing were suspicious cutaneous lesions (Co, 37.4%), suspicion of HPV infection (38.1%), and partner control (4.6%). Of the 397 HPV (54%) positive samples, 43.6% were lr HPV, 29.7% hr-HPV, and 26.7% showed a mixed infection (hr+ lr positive).

The most prevalent lr-genotypes were HPV 6 (24.6%), 42 (8.8%) and 44/55 (6.3%), respectively, and hr-genotypes were HPV 16 (10.3%), 51 (6.1%) and 56 (5.9%).

In men with suspicious genital warts, 77.8% were HPV positive including lr-HPV (47.4%), hr-HPV (7.1%) or a mixed infection (22.9%), with HPV 6 as the most prevalent lr genotype (37.8%). Almost 46% of men tested for contact tracing were positive for HPV, with HPV 53 (11.9%) being the most prevalent hr-HPV strain.

**In male specimens collected from the anus (n=70), HPV 6 was the most prevalent genotype (31.2%), followed by HPV 11 (11.5%) and hr HPV 16 and 53 (8.2%)**

## DISCUSSION

A positive HPV result was detected in 54% of all samples tested. In men with genital warts the high prevalence of HPV 6 was confirmed. However, also hr HPV, or a coinfection with hr HPV were detected in about one third of men with genital warts. In almost half of the men with suspicious HPV infection HPV diagnosis could be confirmed.

## CONCLUSION

**The high percentage of hr HPV types either present as single or mixed infections should be considered for further controls in men and demonstrates the need for HPV diagnosis in men.**

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