

# RESULTS OF HPV-TESTING FROM THREE ANATOMICAL LOCATIONS AMONG MEN WITH DIFFERENT HIV STATUS AND SEXUAL BEHAVIOR

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## Introduction

Oncopathology of various organs and systems is probably associated with the human papillomavirus high carcinogenic risk (HPV HCR).

## Objectives

to study the prevalence of HPV HCR among men with different HIV status and sexual behavior: men who have sex with men (MSM), heterosexual men (HT).

## Materials and methods

The work was conducted during the period from February 2018 to October 2019. The study included 256 men from Moscow and Moscow region: 73 MSM/HIVpos, 66 MSM/HIVneg, 58 HT/HIVpos и 59 HT/HIVneg. All men were tested for 14 types of HPV HCR (16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68). Smears were taken from three anatomical locations: urethra, anus, oropharynx.

We used real-time PCR assay. Reagents to be used for HPV-testing - virus quantity and type determining: «Amplisens® HR HPV screen-titre-FL», «Amplisens® HPV 16/18-FL», «Amplisens® HR HPV genotype-FL».

## Results

Study participants predominated young men aged 35,473±7,362 (18-65, median-35) years, in 138 of them (53,9%) were diagnosed HPV HCR by the HPV-test: MSM/HIVpos – 82,2% (60/73), MSM/HIVneg – 59% (39/66), HT/HIVpos – 43% (25/58), HT/HIVneg – 20,3% (12/59) (tab.1).

The structure of the anatomical location of HPV-positive test differed in the study groups. In group MSM/HIVpos HPV HCR was more often detected in the anus (79,5%); MSM/HIVneg – in the anus (54,5%); HT/HIVpos – in the urethra (24%); HT/HIVneg – in the urethra (16,9%).

Detection of HPV HCR at once in several anatomical locations was recorded in 17.4%.

**Table 1. Results of HPV-testing from three anatomical locations among men with different HIV status and sexual behavior**

Anatomical locations Groups	Urethra	Oropharynx	Anus	All locations
MSM/HIV-pos (n=73)	10 (13,7%)	10 (13,7%)	58 (79,5%)	60 (82,2%)
MSM/HIV-neg (n=66)	6 (9%)	4 (6,1%)	36 (54,5%)	39 (59%)
HT/HIV-pos (n=58)	14 (24%)	3 (5,2%)	13 (22,4%)	25 (43%)
HT/HIV-neg (n=59)	10 (16,9%)	1 (1,7%)	2 (3,4%)	12 (20,3%)
All (n=256)	40 (15,6%)	18 (7%)	109 (42,6%)	138 (53,9%)

The structure of the of HPV genotypes differed by the anatomical location. In the urethra prevailed 16 (27,5%) and 45 (15% ) genotypes; in the oropharynx – 16 (38,8%) genotype, 35 (22,2%) and 45 (16,7%) genotypes; in the anus – 16 (25,7%), 68 (25,7%) and 18 (20,2%) HPV HCR genotypes (tab.2).

**Table 2. HPV HCR in different anatomical locations**

Anatomical locations HPV genotypes	Urethra (n=40)	Oropharynx (n=18)	Anus (n=109)	All locations (n=138)
16	11 (27,5%)	7 (38,8%)	28 (25,7%)	40 (29)
18	2 (5%)	1 (5,6%)	22 (20,2%)	23 (16,6)
31	2 (5%)	0	17 (15,6%)	19 (13,8%)
33	3 (7,5%)	1 (5,6%)	12 (11%)	14 (10,1%)
35	2 (5%)	4 (22,2%)	15 (13,8%)	19 (13,8%)
39	2 (5%)	1 (5,6%)	13 (11,9%)	16 (11,2%)
45	6 (15%)	3 (16,7%)	17 (15,6%)	24 (17,4%)
51	3 (7,5%)	2 (11,1%)	18 (16,5%)	19 (13,8%)
52	4 (10%)	1 (5,6%)	17 (15,6%)	19 (13,8%)
56	4 (10%)	1 (5,6%)	17 (15,6%)	19 (13,8%)
58	3 (7,5%)	0	12 (11%)	15 (10,9%)
59	2 (5%)	2 (11,1%)	16 (14,5%)	18 (13%)
66	0	0	12 (11%)	12 (8,7%)
68	2 (5%)	1 (5,6%)	28 (25,7%)	30 (21,7%)

## Conclusion

HPV screening algorithm development is required for men considering their HIV status and sexual behavior. We recommend HPV testing with 14 HPV HCR genotypes determination in three locations (urethra, anus, oropharynx).