

Abstract 1843

THE CHANGE IN PREVALENCE OF HIGH-RISK HPV GENOTYPES IN CERVICAL CANCER AND PRECANCER IN LATVIA FROM 2016 TO 2024.

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Introduction

Over a decade of active HPV screening and vaccination has changed the prevalence of high-risk HPVs (HR-HPV). HPV vaccination in Latvia started in 2010 with Cervarix, replaced by Gardasil9 in 2020. This retrospective study aimed to determine changes in the dominant hrHPV genotypes in cervical dysplasia (CD) and cancer (CC) in Latvia from 2016 to 2024.

Methods

FFPE cervical tissue samples from patients with CD and CC were retrieved from the hospital repository. DNA was isolated with QIAamp DNA FFPE advanced UNG kit (Qiagen). HPVs were genotyped using Anyplex™ II HPV HR Detection kit (Seegene).

Results

Samples from 128 patients were retrieved, none were HPV vaccinated (> 12 years in 2010; Table 1). Most were HR-HPV(+) – all CC and 90.2% (46/51) of CD samples. HPV16 was the most common, followed by HPV33 (Table 2). HPV56, HPV52, and HPV45 were found only in CC, and HPV31 and HPV66, in CD.

table 1.png

Table 1. Data on patients included in the retrospective study.

	2016 n=11	2017 n=14	2018 n=18	2019 n=17	2020 n=16	2021 n=21	2022 n=15	2023 n=17	2024 n=7	Total n=128
Age (median)	44	48,5	53	51	54,5	36	52	54	71,5	49
Cervical Cancer	5	1	11	11	9	7	11	10	4	79
Grade I	1	1	-	-	-	1	2	1	-	6
Grade II	3	7	4	3	3	6	8	9	-	45
Grade III	1	3	7	7	4	-	1	-	3	26
Cervical dysplasia	8	3	7	7	7	14	4	1	-	51
CIN I	-	-	1	-	2	3	2	-	-	11
CIN II	3	-	-	2	-	5	3	-	-	13
CIN III	5	3	6	5	2	4	-	1	-	27

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table 2.png

Table 2. HR-HPV prevalence by diagnosis.

	n	HPV46	HPV45	HPV38	HPV51	HPV59	HPV16	HPV33
Overall	128	2 1.6%	8 6.3%	0	4 3.1%	0	116 90.8%	32 25%
Cancer	77	0	8 10.4%	0	1 1.3%	0	74 96.1%	26 33.8%
Dysplasia	51	2 3.9%	0	0	3 5.9%	0	42 82.4%	7 13.7%
	n	HPV39	HPV52	HPV35	HPV18	HPV56	HPV68	HPV31
Overall	128	13 10.2%	4 3.1%	5 3.9%	11 8.6%	4 3.1%	0	3 2.3%
Cancer	77	12 15.6%	4 5.2%	2 2.6%	7 9.1%	4 5.2%	0	0
Dysplasia	51	1 2%	0	3 5.9%	4 7.8%	0	0	3 5.9%

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Samples were grouped by year of collection: all and CC samples into 2016-2017, 2018-2019, 2020-2021, and 2022-2024, and CD samples into 2016-2018, 2019-2020, and 2021-2023. HPV16 tended to decrease (Fig. 1(F.1)). The decrease was significant in CD – there were less HPV16(+) in 2021-2023 than in 2016-2018 (F.1B). HPV18 decreased overall, in CC and in CD, while HPV33 and HPV45 increased, in case of HPV33, significantly (F.1). There were more HPV33(+) overall and in CC samples in 2020-2021 and 2022-2024 compared to 2018-2019 (F.1A, F.1C).

layout 2.png

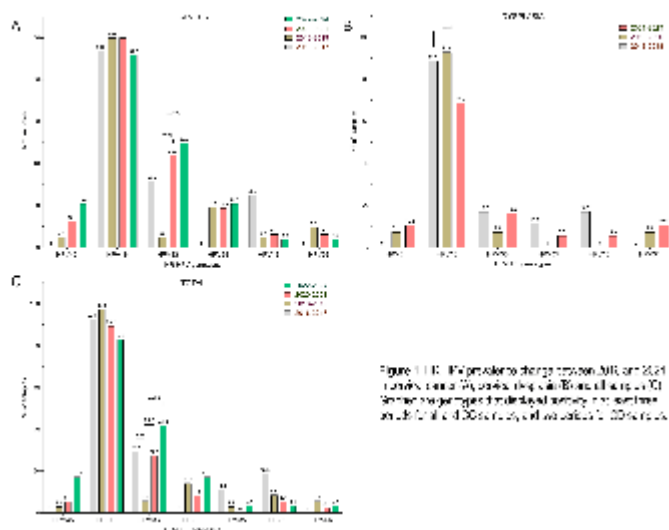


Figure 1: HPV prevalence change between 2016 and 2024 in CC and CD samples. The charts show the number of samples for each genotype and time period. Significance markers (**) indicate statistical significance.

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Conclusions

HPV16 is the most prevalent among HPV-nonvaccinated. HPV16/18, which have been targeted by vaccines the longest, are decreasing in prevalence, while others are on the rise. HPV16/18 decrease might signify a herd effect and have opened a niche for other hrHPVs. Thus, the introduction of multivalent vaccines (including such HrHPVs as HPV33 and 45) seems crucial in protecting the next generations.

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