

Molecular epidemiology of HPV infection in the South-Transdanubian region of Hungary

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Statement of the Problem: Cervical cancer is one of the most common diseases affecting women Worldwide. In Hungary, the lethality is two to three times the European average. The aim of our studies was to determine the genotype of HPV infections using molecular genetic methods in the South-Transdanubian female population, who were diagnosed with HPV infection in our laboratory.

Methodology & Theoretical Orientation: Our study was performed at the Department of Laboratory Medicine of the University of Pecs, Hungary. During the study period 6389 HPV genotypes were identified using Linear® Array genotyping assay and Anyplex™ II HPV28 Detection real-time PCR [Figure 1].

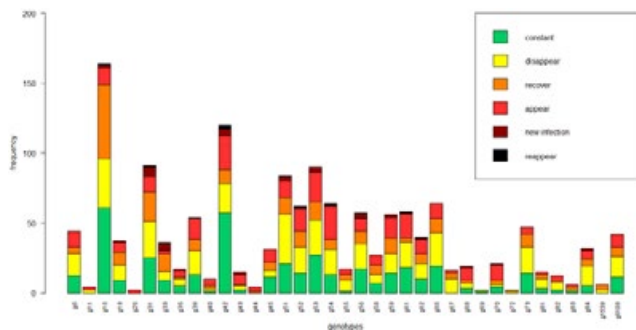


Figure 1. The presence of HPV genotypes in clinical follow-up (n=1127).

Our statistical analysis was performed using SPSS version 20 and RStudio Version 1.4.1103.

Findings: The under-40 age group accounts for more than 50% of all cases. Most of the genotypes isolated are from the high-risk HPV group. The most predominant genotypes are HPV16 (12.6%), HPV42 (7.6%), HPV53 (6.4%), HPV31 (5.7%), HPV51 (5%). When genotypes are examined on a per-individual basis, it can be observed that in each study year some genotypes disappear while others appear in samples from the same individual. Our study underlines hypothesis generation of whether these genotype changes are in fact the evolutionary vanishing out of a genotype replaced by another or a genotype switch of the virus.

Conclusions: The HPV genotypes mostly from high-risk HPV group and most of them are multiple infections. The highest risk is within the younger populations the most prevalent HPV genotype is HPV16, which can

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be isolated in large numbers every year, but the percentage of it decreasing yearly, probably because of the ascendant vaccination. As a result of effective genotype screening in the region since 2014, the number of cervical carcinoma cases has now been significantly reduced.

Biography

Krisztina Futacs, a clinical laboratory researcher, graduated in 2022, works in the Molecular Genetics Laboratory of the University of Pecs, Hungary doing experimental and routine diagnostic work. In recent years, her work has focused on HPV infections and women's health. She has acquired a wide theoretical and practical knowledge of molecular diagnostic techniques, which is an important part of her lecturing activities. In her research work, she has also investigated miRNA targets in HPV+ cervical carcinoma FFPE tissues that can be correlated with EZH2 activity and therefore tumor progression.

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