

Prevalence of multiple High Risk Human Papilloma Virus (HR-HPV) infections in cervical cancer screening in Lazio region, Italy

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Objectives

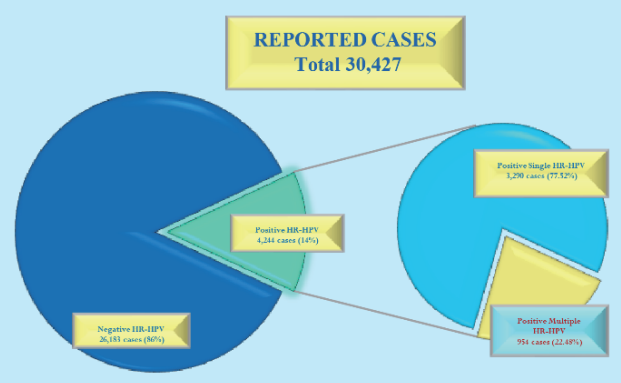
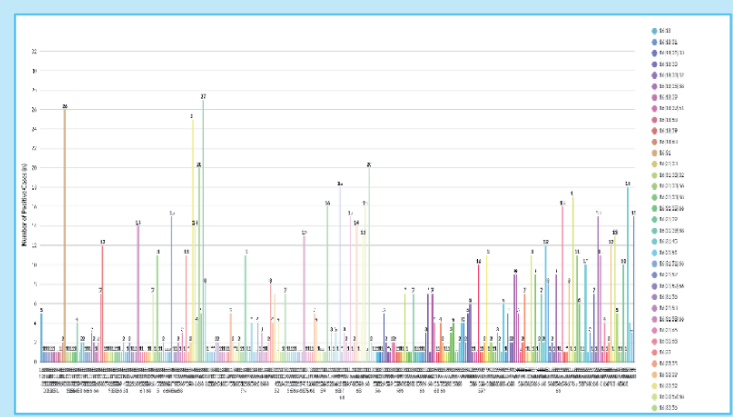
It has been well established that Human Papilloma Virus (HPV) is the major cause of cervical cancer and pre-cancerous lesions; nearly all squamous intraepithelial and invasive cervical lesions are associated with HR-HPV infection. 12 HPV genotypes: 16,18,31,33,35,39,45,51,52,56,58,59 were classified as high risk for cancer by the International Agency for Research on Cancer and 2 genotypes 66,68 as medium risk. HPV genotyping has also pointed out that co-infection with multiple HR-HPV genotypes are possible and quite frequent. Different HR-HPV genotypes have different prognoses as well as the detection of a co-infection with two or more different HPV genotypes may help to identify patients at a higher risk of progression for high-grade squamous intraepithelial lesion (HSIL) and cervical Squamous Cervical Carcinoma (1-2). The purpose of this study is to evaluate the prevalence of co-infection in women tested for HR-HPV in the national cervical cancer screening program of Lazio

Methods

From June to November 2022 a total of 30,447 females, aged from 30 to 64 years, in Lazio Region, were enrolled for cervical cancer screening with HR-HPV Test in our centralized Laboratory, using the Anyplex TM II HPV HR Detection test by Seegene (Arrow), a Real Time PCR method based on DPODM technology (Dual Priming Oligonucleotides) and TOCEMT (Tagging Oligonucleotide Cleavage which identifies the 14 HPV genotypes: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68.

Results

Of the 30,445 analyzed cases 18 (0.06%) were inadequate for low cellularity; among the 30,427 reported cases, 26,183 tested negative (86%) and 4,244 (14%) positive. Among the HR-HPV positive women 3,290 (77.52%) presented a single genotype infection and 954 (22.48%) presented an infection with 2 to 5 different genotype of HR-HPV.



Conclusion

The role of HPV infection in cervical carcinogenesis has been well-established. The majority of HPV infections are auto-resolved, however some, especially HR-HPV infections, can become chronic and progress to HSIL or SQCC. Co-infection by multiple HPV genotypes carries an increased risk of developing cervical cancer. Immunity status, vaccination, lifestyle, and other possible risk factors, may affect the distribution of HPV genotypes in multiple HPV infection.

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