

ORT_18 - Molecular epidemiology of human papillomavirus

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Introduction: Cervical cancer is the most common cancer in developing countries induced by Papillomaviruses. Circular double-stranded DNA genome, around 8 kb non-enveloped belong Papillomaviridae family. More than 200 HPV genotypes and several HPV types, associated to particular diseases as oral lesions (Heck's disease, oropharyngeal carcinoma, laryngeal papillomas), anogenital warts (Bowenoid papulosis, Buschike-Lowenstein tumor), Epidermodysplasia verruciformis (plane warts, Pityriasis-like plaques, squamous cell carcinomas of sun- exposed skin) have been described.

Objectives: The development of vaccines against HPV use recombinant DNA technology, as some viral particles have the ability to self-assembling into virus-like particles. The aim of this study was to evaluate the prevalence of HPV in sexually active women. The demographic and behavior factors were also investigated as co-factors related to cervical cancer.

Methodology: A cross-sectional study was conducted from 2014 to 2016 with randomly selected women from the Manguinhos Complex community in Rio de Janeiro city, who spontaneously accessed gynecology ambulatory. Cervical samples collected with a cytobrush were analyzed by PCR amplification of L1 ORF (450bp). HPV-DNA positive samples were detected by consensus (MY09/MY11), Nested PCR (GP5+/GP6+) and high-types specific primers (HPV16/18/31/45). In order to evaluate the viral DNA quality, swab samples collected were amplified by β -globin PCR primers (PC04/GH20). Restriction fragment length polymorphism (RFLP) assay patterns for mucosal HPVs were used for genotyping. Chi-square test was used to analyze the risk factors associated with HPV infection. The population study understood 100 women, 15 to 75 years aged and presenting normal cytology.

Results: Prevalence of 20% positive samples of cervical HPV-DNA was confirmed. HPV-18 was the most prevalent genotype (8%). About 16% reported being smokers and 3% drug users. Of all the participating women, 27% used alcoholic, 40% reported having had at least one abortion, 15% used oral contraceptives, while 71% did not use any type of condom ($p < 0,03$). Most women were currently not married (56%) and married or cohabitating (44%) ($p < 0.05$).

Conclusion: This molecular epidemiological study estimates a high prevalence of HPV unimmunized women and it may be to contribute for the optimization of prevention strategies.

Keywords: HPV, cervical cancer; Molecular epidemiology