Development of an ELISA-assay for detection of IgA and IgG against human papilloma virus

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Introduction The interest in human papilloma virus (HPV) seropositivity has increased considerably since HPV vaccines have become available worldwide. The aim of this study was to assess the performance of enzyme-linked immunosorbent assay (ELISA) in analysing serum samples provided from women with and without genital DNA-HPV infection confirmed by polymerase chain reaction (PCR), for detection of specific antibodies of the isotypes IgG and IgA recognising HPV-16 and –18, as well as virus-like particles (VLPs).

Methods 50 sexually active female patients between 18 and 33 years of age from the outpatient clinic at the university hospital were enrolled. In order to test them, positive controls were obtained from patients with HPV-induced lesions and who were DNA-HPV positive confirmed by PCR. A specific assay was used to identify antibodies to HPV VLPs by ELISA. The samples were divided into HPV positive and negative, and an ELISA detecting IgA and IgG anti-HPV-VLP was carried out.

Results The effectiveness of ELISA and the kappa (k) index was obtained from the values entered in the receiver operating characteristic (ROC) curves for IgG and IgA. IgG-VLP-HPV-16 showed a good correlation between ELISA and PCR (k=0.75), and IgG-VLP-HPV-18 showed a very good correlation between ELISA and PCR (k=0.84). While the IgA antibody correlation was also positive, although weaker, IgA-VLP-HPV-16 was moderate (k=0.45) and IgA-VLP-HPV-18 good (k=0.66). The efficacy of the assay concerning IgG was: sensitivity, specificity, and accuracy were 82.3%, 92%, and 88% to IgG-VLP-HPV-16, and 100%, 92%, and 94% to IgG-VLP-HPV-18. The assay concerning IgA was: sensitivity, specificity, and accuracy were 64.7%, 80%, and 73.8% to IgA-VLP-HPV-16, and 100%, 80%, and 84.8% to IgA-VLP-HPV-18.

Conclusion IgG and IgA antibodies against HPV-16 and –18 can be detected in unvaccinated individuals by using the VLP that serve as the basis for bivalent HPV vaccine. The values for ELISA assays and the values found for IgG antibodies in response to HPV intramuscular vaccination.

In silico multilocus sequence typing of Chlamydia Trachomatis plasmids shows clustering of isolates according to the disease related biovars

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Introduction Nucleotide sequencing of the ompA gene, encoding the outer membrane protein MOMP, divides C. trachomatis into 15 main genovars comprising three biovars associated