

Carcinogenic human papillomavirus (HPV) in suburban U.S. female population

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Persistent infection by “carcinogenic” HPV is a tumor promoter in cervical cancer induction. However, the issues of persistence of an HPV infection can be adequately studied only when sensitive genotype-specific methods are available to the clinical laboratories which perform routine HPV tests for patient management. As cellular pathology advances from a low-grade intraepithelial lesion (LSIL) to a high-grade intraepithelial lesion (HSIL) and cancer, the viral load per abnormal cell tends to decrease. We have established a highly sensitive nested polymerase chain reaction (PCR) followed by direct automated DNA sequencing of the hypervariable region of the L1 gene for detection and genotyping of HPV in cervicovaginal cell suspensions from a suburban U.S. female population under the care of private gynecologists. Persistent HPV infection is defined as isolation of the same genotype of HPV on repeated testing over a period of 6 months to 3 years. The results of the HPV genotyping were correlated with those of companion Pap cytology tests, and follow-up biopsies. We found that all specimens with LSIL or HSIL cytology test results were associated with an HPV infection. However, the overwhelming majority of clinical specimens which were found to contain “carcinogenic” HPV, even classified as “persistent infection” on repeated testing, were negative in Pap cytology test, or did not progress to HSIL which would indicate a need for immediate colposcopic biopsy. Our findings suggest that “carcinogenic” HPV infection is a weak tumor promoter in cervical cancer induction among women under the health care provided by private gynecologists.

Biography

Sin Hang Lee, M.D. graduated from Wuhan Medical College, China, and is qualified to practice medicine in the United States, Canada and the United Kingdom. He was certified by the American Board of Pathology, and obtained the F.R.C.P.(C) degree by examination in 1966. Dr. Lee has been practicing pathology in New Haven, Connecticut, since 1971. Dr. Lee's most recent research is on DNA sequencing-based genotyping of human papillomavirus from clinical specimens, and sequencing-based molecular diagnosis of Chlamydia trachomatis, Neisseria gonorrhoeae and Borrelia burgdorferi infections. Dr. Lee is currently a pathologist at Milford Hospital, and the director of Milford Medical Laboratory.