

# Lung cancer risk rises in the presence of HPV antibodies

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Researchers with the International Agency for Research on Cancer (IARC) have found that people with lung cancer were significantly more likely to have several high-risk forms of human papillomavirus (HPV) antibodies compared to those who did not have lung cancer. These results, which were presented at the AACR 102nd Annual Meeting 2011, held April 2-6, indicate that HPV antibodies are substantially increased in people with lung cancer.

Devasena Anantharaman, Ph.D., postdoctoral fellow in the Genetic Epidemiology Group at the IARC in Lyon, France, and colleagues used serological tests to determine the presence of several high-risk and low-risk types of HPV in 1,633 lung cancer cases and 2,729 matched controls from six central European countries. Among the lung-cancer-free controls, researchers found a low prevalence of antibodies to all types of HPV tested. In lung cancer patients, antibodies to proteins in eight types of high-risk HPV were significantly increased.

Smoking, which is the strongest risk factor for lung cancer, did not account for this effect. The results were consistent in current smokers, former smokers and those who never smoked.

"While a number of previous studies have demonstrated the presence of HPV in lung cancer, their statistical power has been limited by small average sample size and variations in methodology," said Anantharaman. "We know that HPV can reach the lung, but whether HPV can cause frank malignancies is a question we hope to answer."

High-risk HPV types HPV16 and HPV18 together account for about 70 percent of cervical cancers. Low-risk types, such as HPV6 and HPV11, which cause benign conditions such as genital warts, have also been observed in respiratory papillomatosis, a benign lung condition.

"In the general population HPV is quite common, particularly among young adults 20 to 25 years of age," said Anantharaman. "We expect to see some seropositivity for antibodies to the L1 protein in the general population. But, the early proteins E6 and E7 of high-risk HPV are markers of carcinogenic transformation. These were significantly more prevalent in [lung cancer](#) patients."

Provided by American Association for Cancer Research

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