

# Blood antibodies may predict HPV-positive oropharyngeal cancer survival

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The presence of certain human papillomavirus (HPV)-16 antibodies in the blood was associated with improved rates of survival among patients with HPV-related oropharyngeal carcinoma.

According to Sturgis, the incidence of HPV-positive oropharyngeal carcinoma has increased dramatically in recent years. Although [patients](#) with HPV-positive disease have a better prognosis than those with HPV-negative disease, researchers are still seeking a better understanding of what group of patients is more likely to respond to treatment.

Sturgis and colleagues used blood samples from 209 patients with previously untreated oropharyngeal carcinoma, including 96 who had confirmed HPV-positive disease, and screened the samples for HPV16 antibodies E1, E4-7, L1, L2, and the N-terminal and C-terminal fragments of E2. Samples were taken as part of the initial patient workup, six weeks after the end of treatment, and at six-month intervals up to three years.

Patients who were positive for any of the E antibodies tested had improved overall and progression-free survival compared with those negative for the antibodies. The five-year overall survival estimate for patients positive for E antibodies was 87.4 percent compared with 42.2 percent for patients negative for E antibodies. The five-year progression-free survival estimate was 82.9 percent for antibody-positive patients compared with 46.1 percent for antibody-negative patients.

Patients with HPV-positive disease who were also positive for the NE2, E1, or E6 antibodies had an 80 percent reduced risk for death and a 70 percent reduced risk for disease progression.

No [survival](#) advantage was noted for the L antibodies tested in the study.

E proteins of HPV are antigens that play a role in HPV-mediated carcinogenesis, and L proteins are involved in the development of the virus shell, which are lost once the HPV DNA is integrated into human DNA, Sturgis explained.

In an interview, Sturgis said, ""We found that patients who were serologically positive to the E proteins of HPV16 had a better prognosis than those patients who were seronegative to these antigens. This seemed particularly true of patients who had tumors that we could confirm were HPV-positive.

"If this testing became commercially available it could not only be used as a means of identifying people who are at risk for oropharyngeal and other HPV cancers, but may also allow identification of HPV-related oropharyngeal cancer patients at greater or lower risk for cancer recurrence and death. These data further suggest that if we can modify patient immunity and increase a patient's E antibody response, we might be able to affect cancer outcomes," Sturgis added. "Clinical trials are now testing whether vaccines that can stimulate these [antibodies](#) have clinical utility in HPV-related cancers."

Provided by American Association for Cancer Research

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