

Conundrum solved over HPV link with head and neck cancer

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Electron micrograph of a negatively stained human papilloma virus (HPV) which occurs in human warts. Credit: public domain

A major international trial published in *The Lancet Oncology* has looked at studies from 13 head and neck cancer centers from nine countries around the world. Using the data of 7,895 patients, a research team has found that there is a significant number of people who have "discordant"

results in which two different tests for HPV show different results.

The study found that for one in ten of [patients](#) who have discordant HPV results, they saw significantly worsening outcomes compared to those who tested negative in both tests.

In those cases, 5-year overall survival rates were:

- 81% for patients among double positive tests
- 53% for patients with p16-/HPV+ test
- 54% for patients with p16+/HPV- tests

Testing for whether a [cancer](#) is HPV-related involves two types of tests. The first, which is called HPV testing, looks for the actual virus within the tumor. The second type of test looks for a protein called P16, which has been established as a commonly used biomarker for HPV. P16 is easier to use, and so most people use it as the standard.

The study brought together collaborators from across Europe, coordinated by Professor Hisham Mehanna at the University of Birmingham.

Prof. Mehanna, Professor of Head and Neck Surgery, and lead author of the paper, said, "Through an international collaboration we have been able to answer a question that has perplexed the head and [neck cancer](#) community for over two decades. In that time there has been an emergence of a new type of head and neck cancer: this cancer called Human papillomavirus (HPV)-related head and neck cancer, caused by the same virus that is often responsible for cervical cancer.

"What is remarkable is that patients with HPV head and neck cancer respond much better to current therapies than patients who are not HPV-related. As a result, we are trying to look for less toxic treatments for

these patients to reduce the burden of toxicity. For patients who are HPV negative, we are doing [clinical trials](#) to increase the intensity of treatment—to try to improve outcomes.

"Therefore, testing for HPV in head and neck cancer patients has become a real priority and this new research has solved the conundrum puzzling the international community about why some patients respond much better to treatment than others."

Patients with discordant tests who smoked were at much higher risk of worse outcomes, as the study found that their cancer behaved like HPV-negative cancers. On the other hand, patients with discordant tests who did not smoke had tumors that yielded good outcomes, like HPV-positive cancers.

Professor Mehanna said, "This has significant implications on how we test head and neck cancer patients moving forward, especially in regions where smoking is still prevalent and HPV disease is not prevalent; for example, southern Europe and countries in the east. It also has significant implications for how we choose which studies to enroll these patients in, and in [the] future what treatment they get."

More information: Prognostic implications of p16 and HPV discordance in oropharyngeal cancer (HNCIG-EPIC-OPC): a multicentre, multinational, individual patient data analysis, *The Lancet Oncology* (2023). [DOI: 10.1016/S1470-2045\(23\)00013-X](https://doi.org/10.1016/S1470-2045(23)00013-X)

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