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Ultra-Low-Dose Immunotherapy Plus Oral Chemotherapy Can Make Cancer Treatment More Accessible

Triple oral chemotherapy plus a very low dose of nivolumab led to improved survival for head and neck cancer patients in India.

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Combining oral chemotherapy and ultra-low-dose immunotherapy can extend survival and reduce side effects at a lower cost for people in resource-limited settings, according to a study presented at the American Society of Clinical Oncology Annual Meeting (ASCO 2026).

The Phase III clinical trial, conducted in India, found that people with advanced head and neck cancer who received a three-drug oral chemotherapy regimen plus a much lower dose of the immune checkpoint inhibitor nivolumab (Opdivo) had a higher overall response rate and a 43% lower risk of death.

Head and neck cancer is the second most common malignancy in India, but current standard-of-care treatments—such as platinum-based chemotherapy plus pembrolizumab (Keytruda) or targeted therapies, such as cetuximab (Erbitux)—are expensive and often inaccessible in low- and middle-income countries. Less than 3% of eligible patients in India receive immunotherapy.

“Although effective treatments such as immunotherapy and cetuximab exist for patients with advanced head and neck cancer, they remain inaccessible to most patients due to cost and toxicity,” said lead study author Minit Jalan Shah, MBBS, MD, of the Tata Memorial Centre in Mumbai, in an ASCO news release. “This study demonstrates that a low-cost, well-tolerated regimen can significantly improve survival, making it highly relevant for global oncology practices.”

The trial included 422 people with platinum-sensitive recurrent or metstatic head and neck squamous cell carcinoma (HNSCC) who were receiving treatment with a palliative intent, meaning it was intended to relieve symptoms and improve quality of life rather than cure their cancer. The median age was approximately 45 years, more than 85% were men and most had a history of tobacco exposure—a known risk factor for head and neck cancer. Three quarters had cancer in the mouth, and a quarter had metastatic disease.

The study participants were randomly assigned to receive either platinum-based chemotherapy using paclitaxel and carboplatin via IV infusion every three weeks or a regimen that included three oral chemotherapy drugs (methotrexate, celecoxib and erlotinib) and 20 milligrams of nivolumab by IV infusion every three weeks. The standard dose of nivolumab for HNSCC is 240 mg every two weeks or 480 mg every four weeks. The experimental regimen was substantially less expensive, at about $230 per month, than standard treatment costing about $1,000 per month.

After nearly a year of follow-up, the median overall survival time was 10.3 months in the low-dose immunotherapy plus oral chemotherapy group compared with 6.2 months in the IV chemotherapy group, reflecting 43% reduction in mortality. At one year, the overall survival rates were 46% and 23%, respectively. The median progression-free survival times were 5.5 versus 2.7 months, respectively, representing a 53% lower risk of disease progression or death.

The low-dose immunotherapy plus oral chemotherapy group also had a higher overall response rate, indicating tumor shrinkage (53% versus 24%) and a longer duration of response (11.0 versus 3.6 months) than IV chemo recipients. Those in the former group were 68% less likely to experience cancer progression after having a response to treatment.

What's more, people treated with low-dose immunotherapy plus oral chemotherapy experienced fewer severe side effects (37% versus 48% with Grade 3 or higher adverse events). Rash, elevated liver enzyme and excess bilirubin were the most common adverse events in that group, while blood cell declines were most common in the IV chemotherapy group.

The researchers next aim to identify genomic and molecular predictors of response in an effort to help personalize treatment. They also plan to explore strategies such as escalating or reducing the intensity of treatment based on tumor response and liquid biopsy (blood biomarker) findings, as well as studying this approach for people with earlier-stage disease.

While the experimental combination in this study worked better than the IV chemo regimen at a substantially lower cost, it does not match the effectiveness of standard-of-care treatment in high-income countries, ASCO expert Glenn J. Hanna, MD, of Dana-Farber Cancer Institute cautioned.

"This study is important in that it represents a potential therapy option for patients in resource-limited parts of the world, including India, where the research was conducted," he said. "However, the comparator regimen would not be a standard first-line option in the United States, and the overall survival is lower than what we observe with standard first-line U.S. agents."

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