First-of-its-kind clinical trial eliminates or shrinks melanoma tumors in 70% of patients

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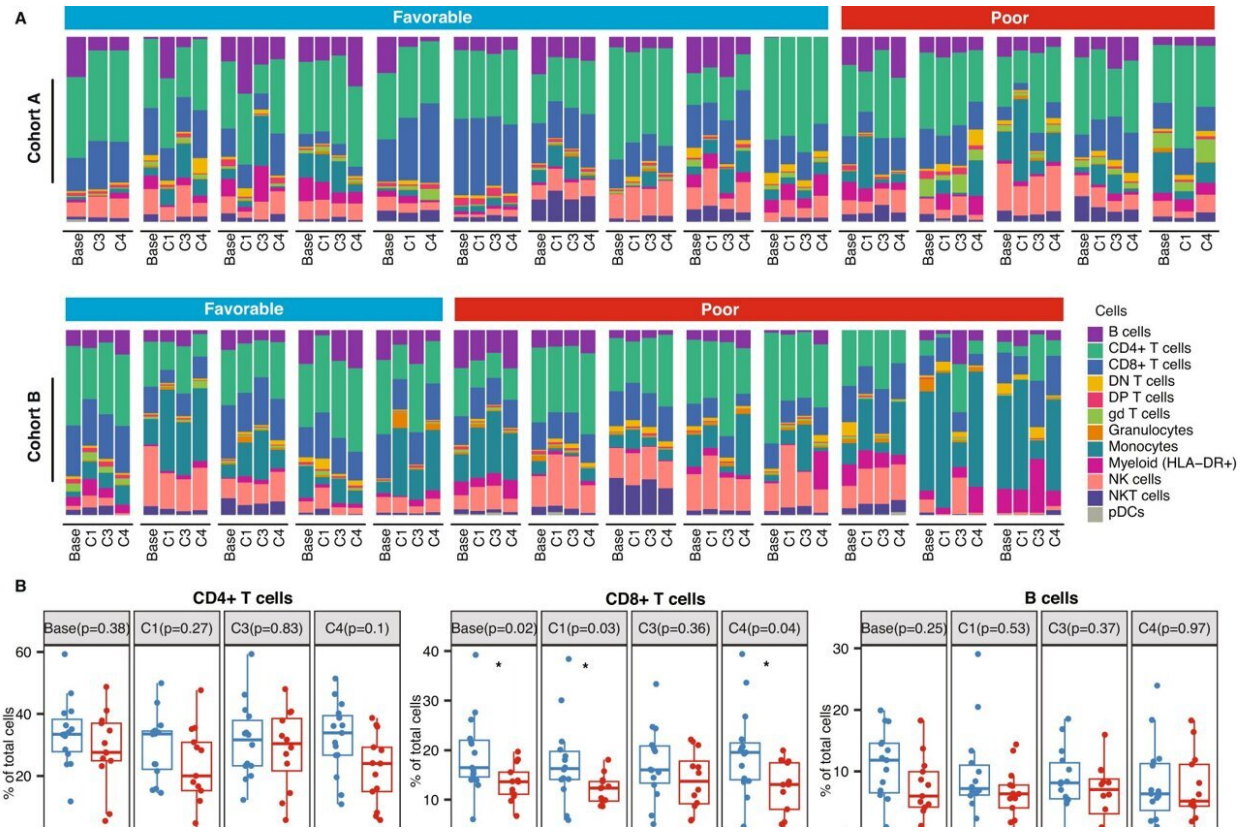

Longitudinal analyses of peripheral blood immune cell populations. Credit: *Nature Communications* (2024). DOI: 10.1038/s41467-024-45798-8

A clinical trial has shown that a new drug combination utilized before surgery completely eliminated or shrunk melanoma tumors in 70% of

trial participants. The phase II clinical trial, NeoACTIVATE, enrolled patients with stage 3 melanoma; trial results were recently shared in a study published in *Nature Communications*.

"We saw that about two-thirds of the patients in one arm of the trial had no remaining tumor at all at the time of their surgery," said Matthew S. Block, M.D., Ph.D., leader of the Stand Up To Cancer (SU2C) Catalyst Research Team that ran the clinical trial, immunologist and a medical oncologist at the Mayo Clinic Comprehensive Cancer Center and senior author of the study.

The new drug therapy tested in this clinical trial involved two combinations of targeted therapy and immunotherapy before surgery, and more immunotherapy after surgery.

This was the first clinical trial to explore using the combination of targeted therapy and immunotherapy before surgery in patients with and without the type of melanoma that has a mutation in a specific gene called the BRAF gene. About one half of people with melanoma have the BRAF mutation. Cancer experts have found certain targeted therapies work especially well to counter that mutation.

"We believe these results support the concept that a short course of certain drug combinations given before surgery can help a substantial number of patients," said Tina J. Hieken, M.D., clinical lead for the Research Team, surgical oncologist at Mayo Clinic Comprehensive Cancer Center and first author of the study.

Melanoma of the skin is the fifth most common cancer in the U.S., according to the National Cancer Institute. About 100,000 Americans will be diagnosed with melanoma in 2024 and about 1.5 million people in the U.S. are living with it.

"Stand Up To Cancer's support of this trial—in collaboration with our donor Genentech, a member of the Roche Group—was critical as we seek to understand and potentially treat this common cancer in new and innovative ways," said Julian Adams, Ph.D., president and CEO of SU2C. "Considering the number of people impacted by melanoma, these results could significantly help improve survival rates."

The clinical trial included three arms. Arm A treated patients who had the BRAF mutation with a combination of drugs called vemurafenib, cobimetinib and atezolizumab before surgery. Arm B included patients without the BRAF mutation, who were treated before surgery with cobimetinib and atezolizumab. Both sets of patients then received atezolizumab after surgery.

Vemurafenib and cobimetinib are targeted therapies that fight cancer by blocking or turning off signals in specific types of cancer cells and may also enhance the immune response. Atezolizumab is an immunotherapy that triggers the body's immune system to help fight the cancer.

The trial results for arms A and B showed that nearly 67% of patients with the BRAF mutation had a complete "pathologic response"—meaning no cancer cells at all were found in their lymph nodes during surgery. Another 20% in this group had a partial response, meaning cancer cells were reduced. In the group with patients who did not have the BRAF mutation, results were not as stark—though were still promising. About 33% had a complete or almost complete pathological response. Another 20% had a partial response.

Assessing both groups together, the treatment completely or almost completely eliminated the tumors in 50% of the trial participants. The treatment significantly shrunk the tumors in an additional 20% of participants.

Arm C of this trial is treating patients with the combination of atezolizumab and a different immunotherapy drug called tiragolumab. The investigators anticipate completing enrollment to this part of the study in the coming months.

Hieken and Block said the trial results offer promise that continued research might lead to this therapy helping melanoma patients whose cancers don't respond well to immunotherapy alone. They are conducting more research and clinical trials to uncover possible biological clues that will help doctors select the best treatment for each individual melanoma patient.

"We're very excited that this Research Team's work is helping us learn more about the potential promise of these therapies," said Ira Mellman, vice president of cancer immunology at Genentech, a member of the Roche Group. "We hope that these promising results will transform into therapies that can help many patients with melanoma."

More information: Tina J. Hieken et al, Neoadjuvant cobimetinib and atezolizumab with or without vemurafenib for high-risk operable Stage III melanoma: the Phase II NeoACTIVATE trial, *Nature Communications* (2024). DOI: 10.1038/s41467-024-45798-8

Provided by Stand Up To Cancer