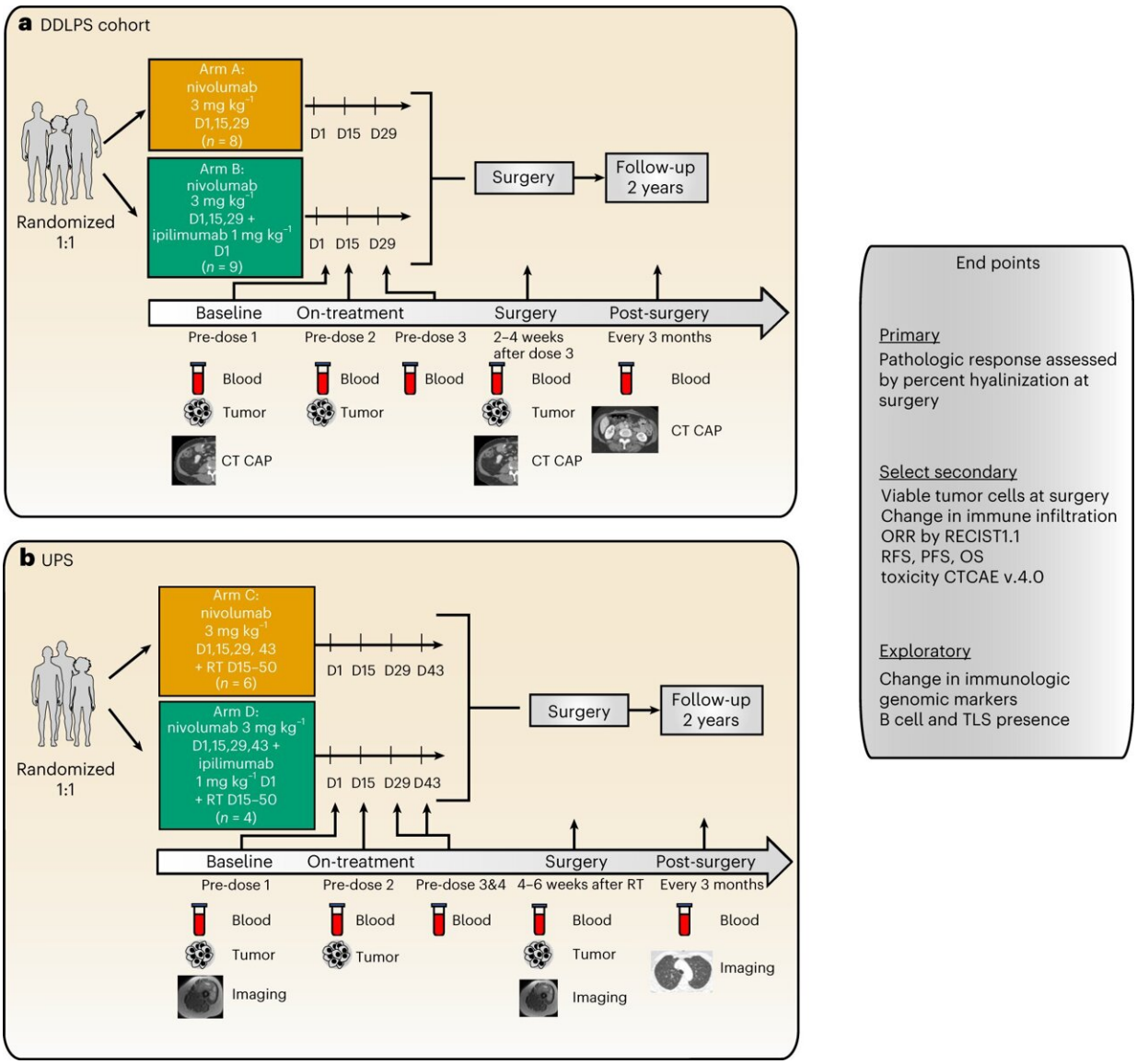
Clinical trial shows immunotherapy before surgery leads to promising long-term survival in sarcoma patients

February 13 2024



Trial schema of immune-checkpoint inhibition in retroperitoneal DDLPS and extremity/truncal UPS. Credit: *Nature Cancer* (2024).
DOI:10.1038/s43018-024-00726-z

Patients with soft-tissue sarcoma treated with neoadjuvant, or pre-surgical, immunotherapy had very little residual tumor at the time of surgery and promising long-term survival, according to Phase II trial results published in *Nature Cancer* by researchers at The University of Texas MD Anderson Cancer Center.

After treatment with a combination of immunotherapy and radiation followed by surgical removal of the residual mass, 90% of patients with undifferentiated pleomorphic sarcoma (UPS) had less than 15% viable tumor cells remaining, better than what has historically been seen with radiation alone. The overall survival (OS) rate at two years after first treatment was 82% in resectable retroperitoneal dedifferentiated liposarcoma (DDLPS) and 90% in UPS.

"These results demonstrate the role immunotherapy treatment can have on soft-tissue sarcomas and how the neoadjuvant treatment platform can help identify novel treatment options for patients," said co-principal investigator Christina Roland, M.D., associate professor of Surgical Oncology. "Sarcoma patients have limited systemic therapy options to consider, and this trial offers data to support the use of immunotherapy in their treatment."

Each year, approximately 13,000 new cases of soft-tissue sarcoma are diagnosed in the U.S. DDLPS and UPS are two of the most common types of soft-tissue sarcoma. Currently, surgery is the only potentially curable treatment option for many patients with resectable soft-tissue sarcoma. However, many patients experience a reoccurrence within five

years.

This is the first study investigating the use of neoadjuvant immunotherapy in patients with soft-tissue sarcoma before curative intent surgery, according to Roland. Radiation therapy and chemotherapy before surgery are the current treatment options for reducing the risk of disease recurrence.

This trial evaluated neoadjuvant nivolumab or nivolumab with ipilimumab in 17 adult patients with DDLPS and 10 adult patients with UPS. Following completion of immunotherapy, all patients underwent surgical resection of their tumors. Samples were collected to identify and define a clinically meaningful response criteria for patients, the study's primary endpoint. These samples also were used to examine tumor factors that might influence outcomes. The researchers found that the presence of intratumoral B cells was associated with improved OS.

"Trial participant biopsies were examined at various stages throughout to asses and examine B cells," said co-principal investigator Neeta Somaiah, M.D., associate professor of Sarcoma Medical Oncology. "We know from previous research the importance of the presence of B cells in a tumor to predict immunotherapy responses, and we found in this study that patients with higher levels of B cells in their tumors were more likely to respond."

Trial participants experienced no increased risk of surgery complications and no new side effects were identified. Adverse effects observed were expected and manageable. The most common side effects were rash, fatigue and diarrhea.

More information: Christina L. Roland et al, A randomized, non-comparative phase 2 study of neoadjuvant immune-checkpoint blockade in retroperitoneal dedifferentiated liposarcoma and extremity/truncal

undifferentiated pleomorphic sarcoma, *Nature Cancer* (2024). DOI: 10.1038/s43018-024-00726-z

Provided by University of Texas M. D. Anderson Cancer Center