RESEARCH SUMMARY

Axicabtagene Ciloleucel as Second-Line Therapy for Large B-Cell Lymphoma

Locke FL et al. DOI: 10.1056/NEJMoa2116133

CLINICAL PROBLEM

For patients with relapsed or refractory large B-cell lymphoma after first-line chemoimmunotherapy, standard second-line treatment includes salvage chemoimmunotherapy and, for patients with a response, high-dose chemotherapy with autologous stem-cell transplantation, but the prognosis for many is poor. The autologous anti-CD19 chimeric antigen receptor (CAR) T-cell therapy axicabtagene ciloleucel (axi-cel) is a potential second-line treatment in such patients.

CLINICAL TRIAL

Design: An international, randomized, phase 3 trial compared axi-cel with standard care as second-line treatment in patients with early refractory or relapsed large B-cell lymphoma.

Intervention: 359 adults with refractory or relapsed disease no more than 12 months after the completion of first-line chemoimmunotherapy were randomly assigned to receive axi-cel or standard care (platinum-based chemoimmunotherapy, followed by high-dose chemotherapy and autologous stem-cell transplantation in those with a response). The primary end point was event-free survival.

RESULTS

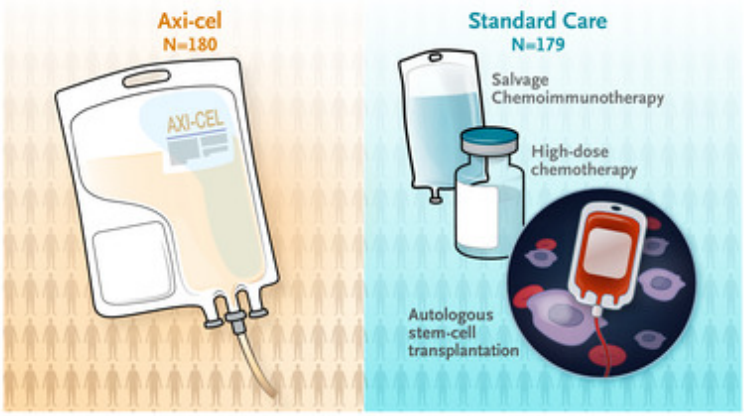
Efficacy: At a median follow-up of 24.9 months, the median event-free survival was significantly longer in the axi-cel group than in the standard-care group.

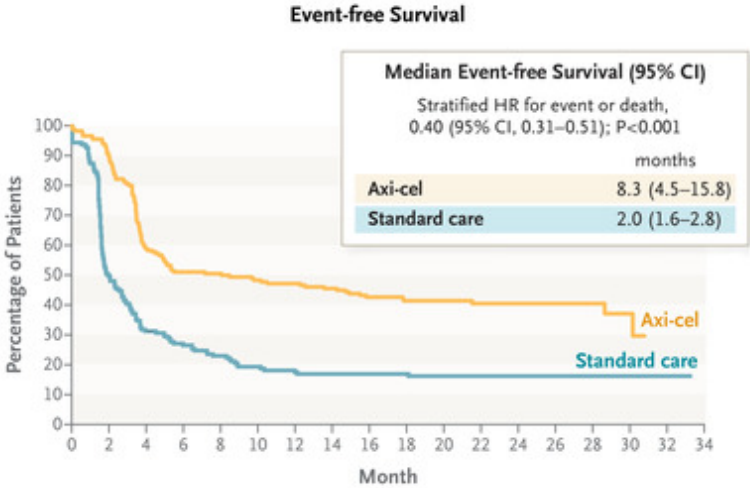
Safety: The incidence of grade 3 or higher adverse events was high in the two groups, with neutropenia most frequently reported. Grade 3 or higher cytokine release syndrome occurred in a minority of axi-cel recipients, and neurologic events were more common with axi-cel than with standard care, but no related deaths occurred.

LIMITATIONS AND REMAINING QUESTIONS

- CD19 expression on progressive tumors was not examined.
- Whether CAR T cells reexpand in blood at progression was not determined.
- The trial did not evaluate CAR T-cell function at progression ex vivo.
- The trial did not identify resistance mechanisms related to tumor size or inflammation.

Links: Full Article | NEJM Quick Take





Adverse Events of Grade 3 or Higher

Percentage of Patients

	Axi-cel (N=170)	Standard Care (N=168)
Any adverse event	91%	83%
Neutropenia	69%	41%
Cytokine release syndrome	6%	—
Any neurologic event	21%	1%

CONCLUSIONS

Second-line treatment with axi-cel was superior to standard care with respect to event-free survival among patients with early refractory or relapsed large B-cell lymphoma, and the adverse-event profile was as expected.