

Breakthrough CAR-T cancer treatments are boosting patients' quality of life

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A therapy that bolsters the immune system may not only help certain

cancer patients live longer, but better, a new study finds.

The treatment, called [chimeric antigen receptor](#) (CAR) T-cell therapy, is used to fight certain types of blood cancer—including leukemia and lymphoma—that have not responded to standard treatments.

It involves removing a patient's own [immune system](#) T-cells, genetically tweaking them to target the cancer, then infusing them back into the patient.

For some people with advanced blood cancers, CAR T-cell therapy is able to wipe out the [malignant cells](#) and keep the disease at bay for years.

But there has been relatively little known about patients' quality of life post-treatment, said study author [Dr. Patrick Connor Johnson](#), an oncologist at Massachusetts General Hospital, in Boston.

"That's obviously very important to patients," he said.

While CAR T-cell therapy can send cancer into remission, Johnson said, it's also an intensive treatment that requires about two weeks in the hospital. That's, in part, to monitor patients for potentially severe side effects.

One of the most concerning is cytokine release syndrome, where the infused T-cells flood the bloodstream with chemicals called cytokines—which can cause problems like [high fever](#), a rapid drop in [blood pressure](#) and breathing difficulty. Severe cases can be fatal.

In addition, some patients develop problems with the [nervous system](#), like headaches, confusion, balance issues and difficulty speaking.

For the most part, Johnson said, those side effects appear in the first 10

days or so.

In the new study, he and his colleagues found—not surprisingly—that patients receiving CAR T-cell therapy had a diminished quality of life before starting the treatment. Their average quality of life was worse than the typical American's (by their own ratings), and it took a further dive in the first week after their CAR T-cell infusion.

That's understandable, Johnson said, These are people who are seriously ill, have received other treatments that did not work, and are now hospitalized and facing an [uncertain future](#)—on top of any side effects from the CAR T-cells.

However, the researchers found, the outlook was improving for most patients by the one-month mark. And by the third month out, their ratings of their quality of life were no different from the average American's.

"For the majority of patients, we do see a rebound to their pre-CAR T-cell level by one month, and then a sustained improvement," Johnson said. "Our hypothesis is, that's because of their response to the treatment."

The findings, published March 30 in the journal *Blood Advances*, are based on 103 patients who underwent CAR T-cell therapy at Mass General. All had advanced cases of blood cancer that had either failed to respond to standard treatments, or had come back after an initial remission.

Overall, 76% went into remission after CAR T-cell therapy, and one-third had neurological side effects from the treatment.

While most patients responded to the treatment, many still had lingering

physical or psychological symptoms six months out.

About 20%, Johnson said, had "clinically significant" anxiety, depression or post-traumatic stress. And a full two-thirds still had bothersome physical symptoms, like pain or fatigue.

It's not clear, Johnson said, whether those problems are related to the cancer, prior treatments or the CAR T-cell therapy. But, he added, it's likely "a mixture."

Although the study was done at one hospital, [Dr. Jae Park](#), a hematologist/oncologist at Memorial Sloan Kettering Cancer Center in New York City, said the results seem in line with what patients experience there.

"There's generally an acute decline in quality of life during the first 30 days, due to the need for hospitalization, treatment-related side effects, infections, the need for transfusions and more," Park said. "However, most patients recover from these side effects and, fortunately, respond to [therapy](#)."

And when they respond, he added, they can usually forgo other treatments, like chemotherapy, which helps them get back to their daily lives.

But like Johnson, Park said it's important to recognize that many patients continue to have physical or mental health symptoms—and try to understand why.

Park said that at Sloan Kettering, there is a survivorship clinic that follows CAR T-cell patients over time—"to better recognize and address these potential long-term, [treatment](#)-related effects."

Johnson said that patients can always tell their care team about any ongoing symptoms. This study, he noted, shows that if they do have lingering symptoms, they are not alone.

More information: The American Cancer Society has more on [CAR T-cell therapy](#).

P. Connor Connor Johnson et al, Longitudinal Patient-reported Outcomes in Patients Receiving Chimeric Antigen Receptor T-Cell Therapy, *Blood Advances* (2023). [DOI: 10.1182/bloodadvances.2022009117](#)

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