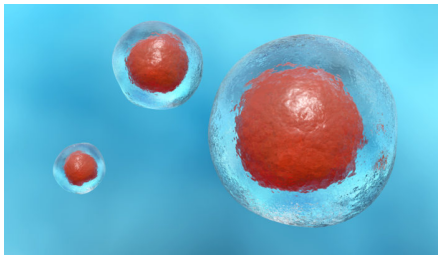
Combination CAR T-Cell Therapy Induces Response in Multiple Myeloma

By **Kerri Fitzgerald** - August 21, 2019



A combination of humanized anti-CD19 and anti-B-cell maturation antigen (BCMA) chimeric antigen receptor (CAR) T-cell therapy resulted in a 95% response rate among patients with relapsed/refractory multiple myeloma (MM), according to a study published in *The Lancet Haematology*.

The study included patients (18-69 years old) who had histologically confirmed MM at the Affiliated Hospital of Xuzjou Medical University in China between May 1, 2017, and January 20, 2019. Patients who underwent autologous hemopoietic cell transplantation less than 100 days prior to study enrollment were excluded.

A total of 21 patients (median age, 58 years; range, 49.5-61.0 years) underwent lymphodepletion with fludarabine 30 mg/m² per day for three days and cyclophosphamide 750 mg/m² per day. They then received an infusion of autologous anti-CD19 CAR T cells 1×10 cells/kg and murine anti-BCMA CAR T-cells 1×10 cells/kg.

Almost all patients respond to treatment

Nearly all patients (n=20) who received the dual CAR T-cell therapy had an overall response (primary endpoint) at a median follow-up of 179 days (range, 72-295 days). Forty-three percent (n=9) experienced a stringent complete response (CR), 14% (n=3) had a CR, 24% (n=5) had a very-good partial response (PR), and 14% (n=3) had a PR.

Many patients (81%) were minimal residual disease (MRD)-negative following treatment, with 94% achieving MRD-negative status one month after the dual CAR T-cell infusion.

The most common treatment-related adverse event was cytokine release syndrome (CRS; n=19; 90%), which occurred a median of nine days (range, 1-15 days) after treatment with a median duration of four days (range, 1-14 days).

Nearly all patients (95%) experienced adverse hematological toxicities, including neutropenia (86%), anemia (62%), and thrombocytopenia (62%).

Two patients died during follow-up, but neither was deemed related to treatment.