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CAR-T CELL THERAPY IN CLL

Selver Kurt

Isparta City Hospital

The treatment paradigm for chronic lymphocytic leukemia (CLL) has shifted dramatically with the FDA approval of liso-cabtagene maraleucel (liso-cel) in March 2024. This marks a historic moment as it introduces the first CAR T-cell therapy for CLL, providing renewed hope to patients who have exhausted conventional treatment options. CAR T-cell therapy represents a remarkable advancement in personalized medicine and immunotherapy. By engineering a patient's own T-cells to target and destroy cancer cells, this innovative approach has demonstrated significant potential. Among CLL patients who undergo this therapy, approximately 25% achieve sustained remission lasting six years or longer, raising the possibility of a curative outcome in select cases. Achieving this milestone, however, has been fraught with challenges. Response rates to CAR T-cell therapy in CLL have traditionally been lower than those seen in other hematologic malignancies. Despite these hurdles, recent clinical trials

have produced encouraging results, with overall response rates exceeding 75% in some studies, particularly when the therapy is combined with agents such as ibrutinib. A key distinction of CAR T-cell therapy lies in its one-time treatment model, in stark contrast to the ongoing management required by traditional therapies. While adverse effects, including cytokine release syndrome and neurotoxicity, remain significant concerns, these risks are increasingly well-managed with modern protocols. The transformative potential of this therapy outweighs these challenges for many patients. Looking to the future, ongoing research aims to enhance the efficacy and accessibility of CAR T-cell therapy. Scientists are focused on understanding why some patients respond more favorably than others and are exploring strategies to overcome resistance. The approval of liso-cel signals not just the addition of a new therapy, but a paradigm shift in the treatment of CLL. This pivotal advancement extends beyond a new treatment option. It signifies hope for patients who previously had limited choices, offering the possibility of durable remission and, in some cases, even a cure. With liso-cel, the fight against CLL enters a new era, one defined by innovation, resilience, and optimism.

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