What do Patients Want? The Importance of Patient-reported Outcomes

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Understanding of what it means for patients to receive CAR-T therapy remains insufficient due to the small number of studies with a quality of life (QOL) focus, selection bias of respondents, high risk of attrition due to disease relapse, and limited length of follow-up. CAR-T therapy is often presented as a last option for patients with advanced disease. The primary aim of the treatment is patient survival and hopefully disease elimination. However, understanding other aspects of health, such as functional status, cognitive function, psychosocial concerns, and other health-related (QOL) issues, is key to appreciating the full impact of such therapies at both the individual and societal levels.

Such information can only be accessed by asking patients and caregivers directly, without going through the filter of a third party, using either patient-reported outcome measures and/or qualitative methods, such as interviews or focus groups. This approach is supported by the cell therapy community, but evidence remains limited (Chakraborty et al. 2019; Shalabi et al. 2021).

Side effects, such as CRS, neurotoxicity, and B-cell aplasia, are well documented. Importantly, many patients report other concerns that impact their well-being and require appropriate support from their health care team (Bamigbola et al. 2021).

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Hoogland and colleagues recently showed that over half of adult CAR-T recipients complained of moderate to severe fatigue (84%), decreased appetite (73%), dry mouth (61%), and insomnia (55%) in the first 100 days following therapy, with a symptom peak seen after approximately two weeks (Hoogland et al. 2021). Compared to baseline, physical functioning significantly improved, with decreased pain, fatigue, and depression, but anxiety increased (Hoogland et al. 2021). In a follow-up study up to 1-year post-CAR-T cell infusion, approximately one-third of patients presented lasting moderate to severe fatigue and insomnia, and 20% had decreased memory compared to baseline (Barata et al. 2021). In contrast, in children and adolescents (3–21 years) who had undergone CAR-T therapy for acute leukaemia, a steady significant improvement in QOL compared to baseline was seen from 3 months post-treatment in all domains examined (Laetsch et al. 2019).

Mental health is a long-term issue, considering that up to 20% of 1 to 5-year adult survivors reported clinically meaningful depression or anxiety and over one-third experienced cognitive difficulties (Ruark et al. 2020). Marziaz and colleagues also showed meaningful improvement in QOL up to month 18 in all domains, except for mental health (Maziarz et al. 2020). Of note, there have been no significant associations identified between the severity of CRS or ICANS and long-term quality of life to date.

Little is known about patient priorities and needs after CAR-T therapy, but the current literature underscores the importance of appropriate information. By interviewing patients, Matthews et al. found that most felt unprepared for the emotional aspects of CAR-T therapy nor were they prepared for the intensity of the toxicities (Matthews et al. 2019). The importance of addressing issues, such as clear information on the treatment trajectory (Bamigbola et al. 2021), financial toxicity, and the importance of family members and other caregivers, has also been described (Foster et al. 2020).

Future studies are needed to broaden the understanding of CAR-T cell therapy survivorship to identify the themes most important to patients, potentially including themes identified in other cell therapy recipients, such as impact on informal caregivers, return to school/work, financial issues, and access to care (Burns et al. 2018). Outcome evaluation in large groups of patients with extended longitudinal follow-up is particularly important to identify predictors of QOL, specifically of mental health and cognitive function, so patients undergoing CAR-T therapy can be better informed and supported.

Key Points

- Symptom burden generally decreases over time, starting from 3 months post CAR-T therapy.
- Mental health and cognitive function remain a concern in long-term survivors.
- Currently, there is no indication of an association between CRS or ICANS and long-term QOL.
- Patient priorities, expectations, and needs regarding CAR-T cell therapy urgently need to be assessed.

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