Abstract: S114

Title: OBECABTAGENE AUTOLEUCEL IN ADULT RELAPSED/REFRACTORY B CELL ACUTE LYMPHOBLASTIC LEUKEMIA: SURVIVAL AND POTENTIAL IMPACT OF CAR-T CELL PERSISTENCE AND STEM CELL TRANSPLANTATION IN THE FELIX STUDY

Abstract Type: Oral Presentation

Session Title: Acute lymphoblastic leukemia - Clinical 1: Immunotherapy: antibodies and CAR-T cells

Background:

Obecabtagene autoleucel (obe-cel, AUTO1) is an autologous chimeric antigen receptor (CAR)-T cell product comprising a fast off-rate CD19 binder to improve safety and expansion/persistence. Pooled results from the pivotal FELIX phase Ib/II study (NCT04404660) of obe-cel in adult patients with relapsed/refractory B cell acute lymphoblastic leukemia (R/R B-ALL) were recently presented (Roddie C et al. Blood 2023;142[Suppl 1]:222).

Aims:

To assess overall survival (OS) and event-free survival (EFS) in all patients treated with obe-cel, as well as the impact of CAR-T cell persistence and consolidative stem cell transplantation (SCT) for patients in remission.

Methods:

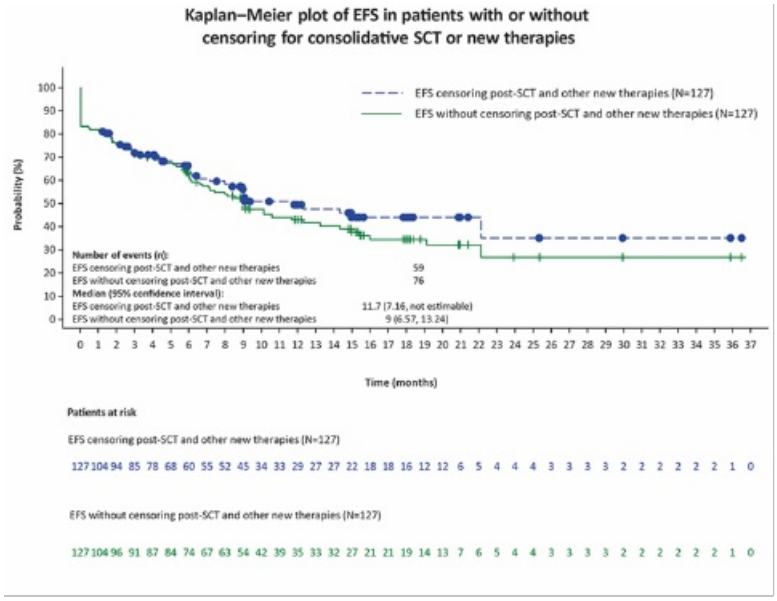
Patients aged ≥18 years with R/R B-ALL were enrolled in the FELIX study. CAR-T products were generated via an automated process. Patients received bridging therapy as appropriate and underwent lymphodepletion (fludarabine, 4×30mg/m2; cyclophosphamide, 2×500mg/m2). Patients then received obe-cel by split dose infusions on Days 1 and 10 based on pre-lymphodepletion leukemic burden at a target dose of 410×106 CAR-T cells. All patients provided written informed consent for inclusion in the study. Obe-cel is an investigational therapy not yet approved for use.

Results:

A total of 127/153 (83%) enrolled patients were infused with obe-cel. At screening, patients' median age was 47 years, and 42%, 31%, and 44% of patients had received prior blinatumomab, inotuzumab ozogamicin, or allogeneic SCT, respectively. The median bone marrow blast burden was 36% (range 0−100). At data cut-off (13 September 2023), median follow-up was 16.6 months (range 3.7−36.6). The overall complete remission/complete remission with incomplete count recovery rate among infused patients was 78% (n=99). Among responding patients, 17/99 (17%) proceeded to consolidative SCT while in remission. All 17 (100%) patients who proceeded to consolidative SCT while in remission were measurable residual disease (MRD)-negative (≤10−4 leukemic blasts) and 10/17 (59%) showed CAR-T cell persistence prior to SCT. Loss of CAR-T cell persistence was associated with a hazard risk of relapse or death 2.9 times that of patients who had ongoing CAR-T cell persistence. Patients who experienced B cell recovery had a hazard risk of relapse or death 1.7 times that of patients without B cell recovery. At 12 months, the EFS rate was 50% and 43% with or without censoring for consolidative SCT or new therapies, respectively (**Figure**); the OS rate was 61% and 59% with or without censoring for SCT, respectively.

Summary/Conclusion:

Without further consolidation post-obe-cel, ongoing CAR-T cell persistence and B cell aplasia were associated with improved EFS. At the current follow-up, consolidative SCT for patients in MRD-negative remission post-obe-cel did not improve EFS or OS. Longer follow-up is needed to validate the requirement of consolidative SCT post-obe-cel.



Keywords: Allogeneic stem cell transplant, Clinical outcome, Acute lymphoblastic leukemia, CAR-T