Gene therapy, cellular immunotherapy and vaccination - Clinical

Franco Locatelli, Alexis A. Thompson, Suradej Hongeng, John B. Porter, et al.

SAFETY AND EFFICACY OF LENTIGLOBIN GENE THERAPY IN PATIENTS WITH TRANSFUSION-DEPENDENT B-THALASSAEMIA AND NON-B0/B0 GENOTYPES IN THE PHASE 3 NORTHSTAR-2 STUDY

Conclusion: The safety profile of LentiGlobin gene therapy in Northstar-2 is generally consistent with previous experience with busulfan conditioning. Delayed platelet engraftment was observed in some patients. Ten of 11 of patients with ≥3 months follow-up stopped chronic RBC transfusions following treatment with LentiGlobin. Total Hb is stable at near-normal levels and bone marrow morphology indicates improvements in erythropoiesis.

Julie Kanter, Alexis A. Thompson, Markus Y. Mapara, Janet L. Kwiatkowski, et al.

UPDATED RESULTS FROM THE HGB-206 STUDY IN PATIENTS WITH SEVERE SICKLE CELL DISEASE TREATED UNDER A REVISED PROTOCOL WITH LENTIGLOBIN GENE THERAPY USING PLERIXAFOR-MOBILISED HAEMATOPOIETIC STEM CELLS

Conclusion: After instituting protocol changes including the use of plerixafor-mobilised HSCs in Group C, we observe that HbAT87Q production at ≥6 months follow-up nearly equalled or exceeded HbS levels. Safety profile of LentiGlobin GT in SCD is consistent with known side effects of HSC collection and myeloablative conditioning, and with underlying SCD. Data from additional patients enrolled under an amended protocol and inclusion of adolescents will help assess the clinical impact of LentiGlobin GT in SCD.

M. Lia Palomba, Connie Batlevi, Isabelle Riviere, Brigitte Senechal, et al.

A PHASE I FIRST-IN-HUMAN CLINICAL TRIAL OF CD19-TARGETED 19-28Z/4-1BBL “ARMORED” CAR T CELLS IN PATIENTS WITH RELAPSED OR REFRACTORY NHL AND CLL INCLUDING RICHTER TRANSFORMATION

Conclusion: Treatment with 19-28z/41BBL armored CAR T cells is safe. No severe CRS was observed
and severe NTX occurred in 8% of the pts. The overall CR rate of 57% is encouraging. CR rates were higher in pts with large cell lymphoma (78%) compared to CLL (20%), though small number of pts limits any firm conclusions. Pts with CLL may require higher doses of CAR T cells or incorporation of the CAR therapy in earlier lines of treatments. Detailed cytokine and CAR T cell expansion analysis as well as updated data will be presented.

Francesca Del Bufalo, Pietro Merli, Luciana Vinti, Mattia Algeri, et al.

ACADEMIC, PHASE I TRIAL ON T CELLS EXPRESSING BOTH CD19 CHIMERIC ANTIGEN RECEPTOR AND INDUCIBLE CASPASE 9 SAFETY SWITCH FOR TREATMENT OF CHILDHOOD ACUTE LYMPHOBLASTIC LEUKAEMIA AND NON-HODGKIN LYMPHOMA

Conclusion: iC9-CD19-CAR T cells in an academic setting is feasible, safe and largely effective in treating highly resistant/relapsed BCP-ALL. In our trial, no major or life-threatening toxicities were recorded and despite the mild CRS recorded, high rates of CR were achieved, suggesting that a mild activation of retroviral, 4.1bb –including, iC9-CD19-CAR T cells is sufficient to mediate a potent antitumor effect.

Valentín Ortiz-Maldonado, Ana Alonso-Saladrigues, Miguel Caballero-Baños, Maria Castella, et al.

FRACTIONATED DOSING OF ARI-0001 CELLS (A3B1:CD8:4-1BB:CD3Z CAR19) AND EARLY TOCILIZUMAB ADMINISTRATION MAY REDUCE THE INCIDENCE OF SEVERE CYTOKINE RELEASE SYNDROME IN PATIENTS WITH CD19+ MALIGNANCIES

Conclusion: The fractionated administration of ARI-0001 cells may improve their safety profile by reducing the incidence of grade ≥ 3 CRS. The incidence of ICANS appeared equally low with both approaches. Based on these preliminary results, FD has been selected for a phase 2 multicenter trial on the use of ARI-0001 cells in patients with R/R ALL.

POSTER

Chenggong Li, Heng Mei, Yu Hu, Tao Guo, et al.

IL-6 ASSOCIATED WITH GRADING OF CYTOKINE RELEASE SYNDROME AND
MANAGEMENT TIME OF TOCILIZUMAB AFTER CAR-T CELL THERAPY

Conclusion: Our research demonstrates a positive correlation between the peak level and time of serum IL-6 and the CRS grade. The level of serum IL-6 is an important consideration for the administration of tocilizumab in the early stage of CRS, which can effectively avoid some adverse reactions such as CRES. (NCT02965092, ChiCTR1800018143)

Surbhi Sidana, Amylou Dueck, Michelle Burtis, Joan Griffin, et al.

QUALITY OF LIFE IN PATIENTS UNDERGOING CHIMERIC ANTIGEN RECEPTOR (CAR)-T CELL THERAPY VS. AUTOLOGOUS AND ALLOGENEIC STEM CELL TRANSPLANT FOR HEMATOLOGIC MALIGNANCIES

Conclusion: Preliminary data show that patients undergoing CAR-T cell therapy do not experience a more significant dip in QOL compared with autologous and allogeneic SCT, with some indication of better PWB in the short-term. Accrual & follow-up are ongoing. Updated results, including 3-month follow up will be presented at the meeting.