Abstract: PB3003

Title: REAL WORLD DATA OF ANTI-CD19 CHIMERIC ANTIGEN RECEPTOR T-CELL THERAPY FOR ADULT PATIENTS WITH REFRACTORY/RELAPSED HIGH GRADE B CELL LYMPHOMA AND MANTLE CELL LYMPHOMA IN ONE CENTRE IN SOUTHERN GREECE.

Abstract Type: Publication Only

Topic: Aggressive Non-Hodgkin lymphoma - Clinical

Background:

Chimeric Antigen Receptor T (CAR-T) cell therapies are becoming a staple in treating refractory/relapsed (R/R) hematologic malignancies. Their toxicity profile is expanding owing to increasing documentation of real-world data (RWD) beyond the scope of clinical trials. Since August 2022, two anti-CD19 CAR-T cell products have been authorized for use in the Hematology Clinic of the University Hospital of Heraklion (PaGNI): i) axicabtagene ciloleucel (Yescarta) for adults with R/R diffuse large B-cell lymphoma (DLBCL), relapsed high grade B-cell lymphoma (HGBL) within 12 months of 1st line therapy, R/R primary mediastinal B-cell lymphoma (PMBCL) after two or more lines of therapy and follicular lymphoma (FL) after three or more lines of therapy, and ii) brexucabtagene autoleucel (Tecartus) for adults with R/R mantle cell lymphoma (MCL) after two lines of therapy and R/R B-cell precursor acute lymphoblastic leukemia (B-ALL) for patients 26 years of age or older.

Aims:

Real-world data of anti-CD19 Chimeric Antigen Receptor T-cell therapies for adult patients with Refractory/Relapsed High Grade B Cell Lymphoma and Mantle Cell Lymphoma in one centre in southern Greece.

Methods:

From September 2022 until January 2024 eleven patients were referred for CAR-T cell therapy to the Hematology Department of the University Hospital of Crete. Seven patients underwent lymphocyte collection and for all of them a CAR-T cell product was successfully manufactured and administered.

Results:

From November 2022 until January 2024, seven patients were infused with CAR-T cellular products. Four patients who were referred but not collected experienced disease progression and/or death before they were further evaluated for collection at our centre. Of the 7 patients treated, 5 received axicabtagene ciloleucel and 2 brexucabtagene autoleucel. The median age of the patients infused was 49 years (range 29-73). Four patients were diagnosed with DLBCL, 1 patient with PMBCL and 2 with MCL. The median number of previous therapies were 4 (range 2-8). Two patients had undergone autologous stem cell transplant; one at first line for MCL and one for relapsed MCL. The median time between lymphocyte collection and product infusion was 64 days (range 42-183). All patients received lymphodepletion therapy prior to product infusion with fludarabine and cyclophosphamide according to manufacturer guidelines. All patients experienced cytokine release syndrome (CRS) (grade I: 6, grade III:1) and were treated with a combination of tocilizumab (8mg/kg q.d.) and steroids (dexamethasone 10mg q.i.d.) with subsequent resolution after a median of 4 days (range 1-10). Three patients (43%) experienced immune effector cell-associated neurotoxicity syndrome (ICANS) (grade I: 1, grade III: 1, grade IV: 1) and were treated with steroids alone (methylprednisolone 1gr q.d., dexamethasone 10mg q.i.d.). Three patients required intensive care unit (ICU) admission; two due to ICANS and one due to CRS. The median stay in ICU was 3 days (range 1-4). In 6 of the seven patients immunoglobulin levels were accessed and two of them (30%) experienced hypoglobulinemia (as defined by IgG <400 mg/dL). Four (57%) of the 7 patients had infectious complications less than 100 days from the product infusion; two had fungal and two had bacterial together with viral. One patient experienced sHLH/MAS. With a median duration of observation of 181 days (range 31 – 265) two deaths (29%) have occurred; one due to disease progression at day + 190 and one, who

did not respond to CAR-T cell therapy, from invasive fungal disease at day + 43. All 5 (71%) patients still alive have documented complete response at their last follow-up.

Summary/Conclusion:

The toxicity landscape of CAR-T cell therapies is becoming clearer by the day, as more real-world data are reported. The toxicities are manageable if recognised and treated early.

Keywords: CAR-T, Infection, Real world data, Toxicity