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POSTER ABSTRACTS

622.LYMPHOMAS: TRANSLATIONAL-NON-GENETIC

Low Tmtv Influences Response and Outcomes in R/R DLBCL 3L+ Patients Treated with CAR-T Cells : First Results of FDG-PET/CT Analysis in the French Descar-T Registry

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Context : DESCAR-T is a French national registry designed by LYSA/LYSARC including real-life patients receiving commercial CAR T-cells for hematologic malignancies. We initiated a project to conduct a centralized review of Fluorodeoxyglucose Positron Emission Tomography and Computed Tomography (FDG-PET/CT) performed before CAR T-cells infusion, and during follow-up, to evaluate the impact of several metabolic imaging parameters at baseline and response assessment.
Materials and methods : Patients with relapsed/refractory (R/R) DLBCL who initiated at least a third line of therapy (3L+) from the DESCAR-T registry and treated with commercial anti-CD19 CAR T-cells, with at least one central reviewed PET before CAR T-cell infusion (PRE-CAR T), at one month (M1) or three months (M3) after infusion, were included. For each visit, Total Metabolic Tumor Volume (TMTV) and SUVmax of the tumor were measured. Deauville score (DS) and response according to 2014 Lugano classification were registered on follow-up FDG-PET/CT. TMTV optimal cut-off for survival prediction (PFS and OS) was determined using X-tile analysis and association of DS with prognosis was studied. Progression-free survival (PFS) was defined as the time between CAR T-cell infusion and progression during follow-up. Overall survival (OS) was defined as the time between CAR T-cell treatment and death during follow-up.
Results : Our analysis included FDG-PET/CT data from 212 R/R DLBCL patients (59 treated with tisagenlecleucel and 153 with axicabtagene ciloleucel). Median follow-up was 24.1 months and overall response rate was 47.1% with 112 patients presenting progression or relapse. On PRECAR-T FDG-PET/CT, the median SUVmax was 16.1 (25th-75th percentiles, 8.55-25.30) and median TMTV was 43.91 cm3 (25th-75th percentiles, 12.79-140.43 cm3). Tumor burden significantly affected survival using a TMTV optimal cut-off of 30 cm3. It was associated with a shorter PFS in patients with PRECAR-T TMTV $\geq$30 cm3 compared with <30 cm3 (median of 3 vs 22.2 months; p=0.0001; respectively) and a shorter OS (median of 9.4 vs 32 months ; p=0.0001; respectively).
Regarding metabolic response at M1, reported in 192 patients, DS 1-3 (n=120; 62.5%) was significantly associated with better PFS and OS than DS4-5 (n=72; 37.5%) (for PFS: median of 1.3 vs 21.8 months ; p<0.0001; for OS: median of 4.5 vs 30.6 months; p<0.0001). Of note, considering only DS5 (n=46; 24%) as unequivocally insufficient response onM1 evaluation, identified patients with the poorest outcomes (for PFS: median of 0 month vs 21.2 months ; p<0.0001; for OS: median of 4.5 months vs 31.1 months; p<0.0001).
Conclusion : Low PRECAR-T TMTV influences response and retains its predictive and prognostic value in R/R DLBCL patients treated with anti-CD19 CAR T-cells. Moreover, metabolic response assessed with DS is significantly associated with patients' outcome.

Disclosures Sesques: *KITE/GILEAD , BMS, JANSSEN, NOVARTIS, CHUGAI:* Consultancy. **Cartron:** *Gilead:* Honoraria; *Roche:* Consultancy, Honoraria; *Janssen:* Honoraria; *MedxCell:* Consultancy; *MabQi:* Consultancy; *Novartis:* Honoraria; *Ownards Therapeutics:* Consultancy; *BMS:* Consultancy, Honoraria; *AbbVie:* Consultancy, Honoraria; *Emercell:* Consultancy; *Jansen, Gilead, Novartis, F. Hoffmann-La Roche Ltd, BMS, Abbvie:* Honoraria; *MedxCell, Ownards Therapeutics, MabQi, Emercell, F. Hoffmann-La Roche Ltd, BMS, Abbvie:* Consultancy; *MabQi, Ownards Therapeutics, Abbvie, Roche, Bristol Myers Squibb:* Membership on an entity's Board of Directors or advisory committees. **Houot:** *Kite/Gilead, Novartis, Incyte, Janssen, MSD, Takeda, F. Hoffmann-La Roche Ltd:* Honoraria; *Kite/Gilead, Novartis, Bristol-Myers Squibb/Celgene, ADC Therapeutics, Incyte, Miltenyi:* Consultancy. **Di Blasi:** *Kite Gilead:* Consultancy, Honoraria; *BMS:* Consultancy; *abbvie:* Honoraria; *Pfizer:* Honoraria; *Janssen:* Consultancy; *Novartis:* Consultancy, Honoraria; *Incyte:* Honoraria.

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