[18F]Fluorodeoxyglucose-PET/MRI-based response assessment following BCMA-directed CAR T-cell therapy with ciltacabtagene autoleucel in relapsed/refractory multiple myeloma

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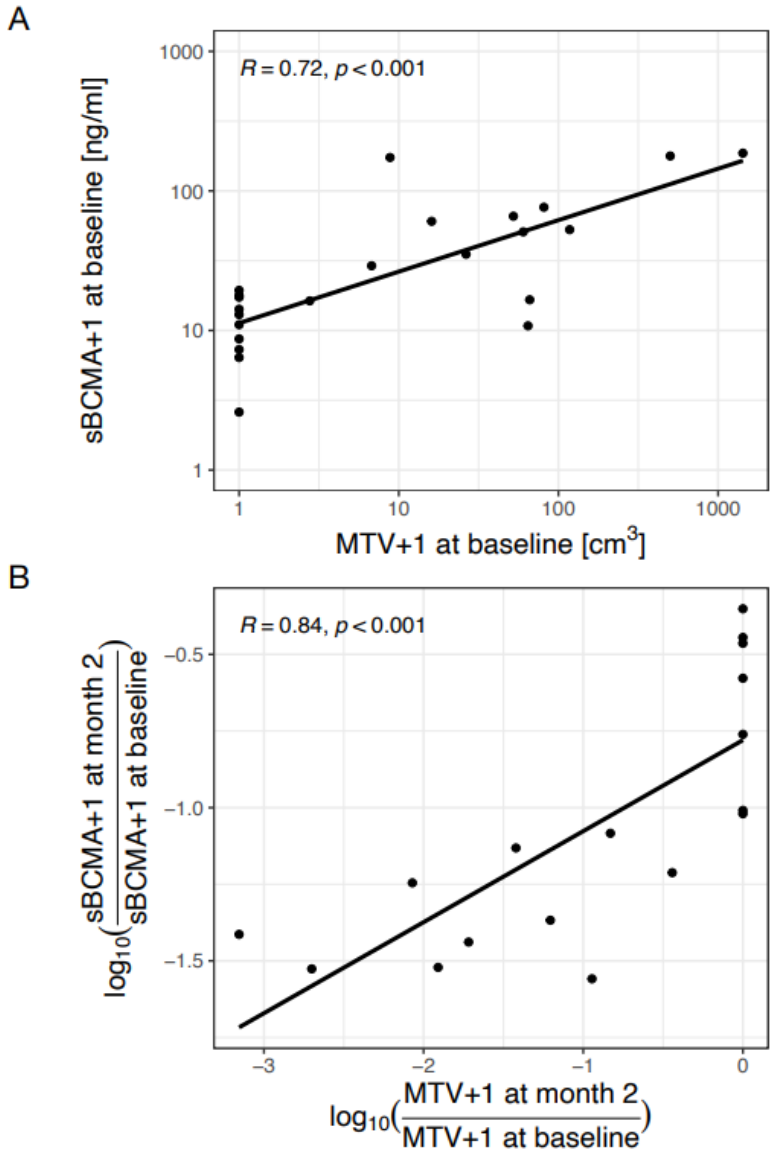
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Supplementary data:

Supplementary figure 1

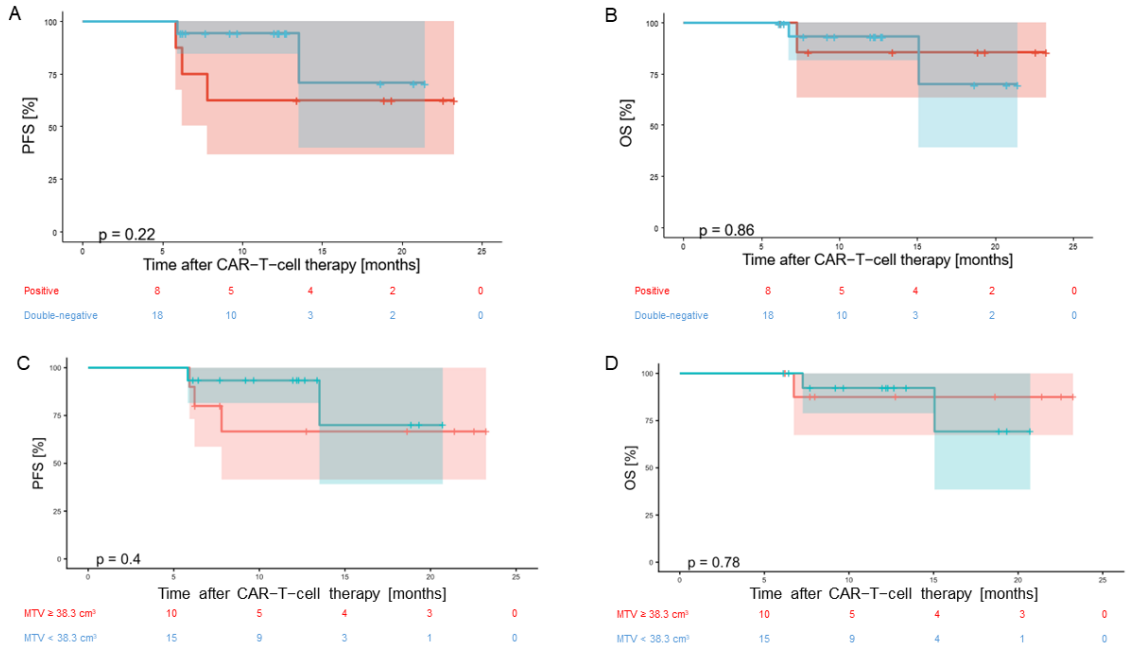


Legend to supplementary figure 1: Correlation of sBCMA and MTV before and after cilta-cel (A) Correlation of sBCMA and MTV at baseline (before cilta-cel). (B) Correlation of the change in sBCMA-levels and MTV-levels from baseline to month +2 after cilta-cel. At month +2, MTV levels were undetectable (0) in 25 out of 26 patients.

Spearman's rank correlation coefficient was used to assess associations. To enable visualization of log-transformed data, a value of 1 was added to both sBCMA and MTV

prior to $\log_{10}$ transformation. This adjustment does not affect the Spearman correlation results.

Supplementary figure 2



Legend to supplementary figure 2: PFS and OS dependent on MRD-status and baseline MTV (A) Progression-free survival in patients with MRDneg (bone marrow) and CMR (PET) at month 2 (blue curve) vs. patients with either MRDpos (bone marrow) and/or Non-CMR (PET) at month 2 (red curve). (B) Overall survival in patients with MRDneg (bone marrow) and CMR (PET) at month 2 (blue curve) vs. patients with either MRDpos (bone marrow) and/or Non-CMR (PET) at month 2 (red curve). (C) Progression-free survival in patients with baseline MTV ≥ 38.3 cm^3 (red curve) vs. baseline MTV < 38.3 cm^3 (blue curve). (D) Overall survival in patients with baseline MTV ≥ 38.3 cm^3 (red curve) vs. baseline MTV < 38.3 cm^3 (blue curve). Survival analyses were performed using the Kaplan-Meier estimator for survival curve estimation. The cut-off for MTV (38.3 cm^3; median specificity: 70%; median sensitivity: 90.3 %) was calculated by ROC-analysis.

Supplementary table 1

Sites and response patterns of EMD lesions

Patient	EMD sites at baseline	Metabolic response of EMD lesions at month 2	Morphologic response of EMD lesions at month 2	EMD sites at relapse after CAR-T
#2	pleura	CMR	PR	
#4	pancreas	CMR	PR	pancreas
#11	mediastinum	Non-CMR	SD	
#12	liver, muscle, spleen	CMR	CR	
#17	peritoneum, corpus cavernosus penis	CMR	PR	
#22	pleura	CMR	CR	pleura
#23	lymphnodes, peritoneum, pleura, liver, kidney, adrenal glands	CMR	PR	pleura
#25	muscle	CMR	PR	
#26	retrocrural space	CMR	CR	retrocrural space

Abbr.: EMD – extramedullary disease; CMR – complete metabolic response; Non-CMR – Non complete metabolic response; CR – complete response; PR – partial response; SD – stable disease