cingulate (p FWE-corrected <0.003). Patients who experienced CRS without ICANS showed significant hypometabolism in less extended clusters mainly involving bilateral medial and lateral temporal lobes, posterior parietal lobes, anterior cingulate and cerebellum (FWE-corrected p<0.002). When ICANS and CRS subgroups were directly compared, patients with ICANS showed a more prominent hypometabolism in orbitofrontal and frontal dorso-lateral cortex in both hemispheres (FWE-corrected p<0.002). Mean baseline MTV and TLG were significantly higher in ICANS patients with respect to patients with CRS only (p<0.02). ***Conclusion:*** Patients with ICANS after treatment with CAR-T are characterized by a fronto-lateral hypometabolic signature in line with the hypothesis of ICANS as a predominant frontal syndrome and with the more prominent susceptibility of frontal lobes to cytokine-induced inflammation.

## OP-051

### A pilot study comparing myelin measurements from [18F]-Florbetaben PET and quantitative T1 map imaging in multiple sclerosis (MS)

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***Aim/Introduction:*** PET imaging with β-amyloid ligands (amy-PET) is emerging as a molecular imaging technique targeting quantitative measurement of myelin content changes in MS. T1 relaxation time maps have been recently proposed for the qualitative and quantitative classification of MS lesions according to myelin content and to track lesional myelination changes over time. However, this MRI metrics has not yet been validated, and no data are to-date available on the relationship between T1-map and AMY-PET-based myelin measurements. We aimed to explore the correlation between lesional white matter (WM) amy-PET uptake and quantitative (q) T1 map metrics. ***Materials and Methods:*** Patients with relapsing-remitting (RR) and primary progressive (PP) MS were recruited in a project funded by the Italian Ministry of Health. All patients underwent both 3T MRI with standard sequences and qT1 map and dual dynamic amy-PET imaging with [18F]Florbetaben (early dynamic of the first 30 minutes and late steady-state acquisitions 90-110 minutes p.i.). Lesions were segmented on 3T MRI and for every lesion T1/T2 ratio (considered a rough measure of myelination) and intensity and coefficient of variance (capturing lesions' heterogeneity) on qT1 map were measured. PET images were spatially and intensity normalized. SUVratio was measured on early dynamic and late static PET images in the individual lesions and in the contralateral normal appearing white matter (NAWM). Correlation between WM amy-PET on one side and T1/T2 ratio and T1 map on the other were assessed by means of Pearson's correlation coefficient. ***Results:*** 607 WM lesions were analyzed in nineteen MS patients (10 primary-progressive, 9 relapsing-remitting) and were included in the analysis. In the lesion based analysis, both early-dynamic and steady state SUVr was significantly correlated with both T1/T2 and qT1 map. This correlation was significant with both lesions' intensity and coefficient of variation and was not affected by lesions' volume and patient's clinical phenotypes (p<0.0001 in both cases). When looking at the NAWM, the voxel-to-voxel correlation coefficient was higher in the gray-white matter transition zone. ***Conclusion:*** Both early and late steady state metrics derived from amy-PET correlate with advanced qT1 map data. Amy-PET seems to be able to reflect both the degree of demyelination and lesions' heterogeneity; however the potential influence of the topography of the lesions on PET signal seems to affect SUVr measurement and should be considered in more clinically-oriented studies.

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**Sunday, September 10, 2023, 8:00 AM - 9:30 AM**

**Hall F2**

## Paediatrics Committee - TROP Session: Paediatric PET/CT & PET/MR

## OP-052

### Predictive value of FDG PET/CT parameters in pediatric Hodgkin Lymphoma: initial results of an Italian prospective study

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***Aim/Introduction:*** FDG PET/CT represents an essential tool for pediatric Hodgkin lymphoma (HL). In this context, volumetric analyses might be a valuable tool to discriminate disease prognosis and response. To validate this assumption, the AIEOP Hodgkin Lymphoma Study Group has designed a parallel study of the cohort of patients enrolled in the EuroNet-PHL-C2 trial. Herein, we present the initial results obtained from this cohort. ***Materials and Methods:*** We analyzed data from the first 200 patients (94M, 106F; median age 15years) with HL enrolled in 24 Italian centers from January 2017 to December 2020 for the EuroNet-PHL-C2 protocol. The cohort was classified based on treatment level: TL1 (31 patients), TL2 (90 patients) and TL3 (79 patients), of whom 71 with bulky masses. Response was classified into adequate (AR) and inadequate response (IR) as per protocol. The primary objective of the study was to define the predictive role of volumetric and semiquantitative analyses, i.e., SUVmax, SUVmean, MTV and total lesion glycolysis (TLG), as well as lymphoma dissemination (Dmax), at FDG PET/CT at baseline and during therapy. In particular, treatment response was assessed at early (ERA) and late evaluation (LRA). Semi-automatically delineated contours of the lesions were performed by using a fixed SUV threshold of 2.5. All parameters and their variations (Δ) were analyzed with respect to response. ***Results:*** At baseline, our cohort presented a median SUVmax of 12.5 (95%CI: 12.1-13.1), median SUVmean