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ALZHEIMER'S IMAGING CONSORTIUM
POSTER PRESENTATIONS
IC-P

IC-P-001 | THE INCREMENTAL DIAGNOSTIC VALUE OF 18F-FLORBETAPIR IMAGING IN NATURALISTIC PATIENTS WITH COGNITIVE IMPAIRMENT: THE INDIA-FBP STUDY

Cristina Muscio[1], **Marina Boccardi**[1], Ugo Paolo Guerra[2], Barbara Paghera[3], Claudio Pizzocaro[2], Michela Pievani[4], Alessandro Padovani[5], Giovanni Frisoni[6], [1]*LENITEM, Brescia, Italy;* [2]*Fondazione Poliambulanza, Brescia, Italy;* [3]*University of Brescia and Spedali Civili di Brescia, Brescia, Italy;* [4]*Laboratory of Epidemiology, Neuroimaging and Telemedicine, IRCCS Centro San Giovanni di Dio Fatebenefratelli, The National Center for Research and Care of Alzheimer's and Mental Diseases, Brescia, Italy;* [5]*Centre for Neurodegenerative Disorders, Neurology Unit, University of Brescia, Brescia, Italy;* [6]*Memory Clinic and LANVIE - Laboratory of Neuroimaging of Aging, University Hospitals and University of Geneva - Laboratory of Epidemiology, Neuroimaging and Telemedicine, IRCCS Centro San Giovanni di Dio Fatebenefratelli, The National Center for Research and Care of Alzheimer's and Mental Diseases, Brescia, Italy.*
Contact e-mail: *mboccardifbf@googlemail.com*

Background: Amyloid PET imaging enables the in vivo estimation of brain β-amyloid neuritic plaque density and can be used to support an Alzheimer's Disease (AD) diagnosis in research settings (Albert et al., 2011). The added value of amyloid PET imaging in clinical settings is less known. Data are starting to emerge but still limited (Vandenberghe et al., 2013; Grundman et al., 2012). We report preliminary findings about the incremental diagnostic value of 18F-Florbetapir amyloid PET on top of routine assessment in an Italian naturalistic setting. **Methods:** The study started in Sept 2013 and plans to enroll 250 patients coming to observation of 21 Alzheimer's Evaluation Unit in Eastern Lombardy, Italy, until Dec-2014. 30 healthy elderly controls (HC) will also be enrolled. Patients will undergo a diagnostic work-up according to usual local practice. Physicians will formulate a clinical diagnosis and rate their diagnostic confidence (range between 15% and 85%). Patients will undergo 18F-Florbetapir PET. Diagnosis, diagnostic confidence and treatment plan will be revised based on 18F-Florbetapir scan results. **Results:** During the first 5 months, 73 patients and 9 HC were enrolled. Of these, 57 patients completed their diagnostic work-up. Clinical diagnosis were as follows n=15 MCI due to AD; n= 23 AD; n=3 FTD; n=7 MCI not due to AD; n=9 had other dementias (PDD, DBL, CBS). 56 patients and 8 HC underwent 18F-Florbetapir PET. Negative scans occurred in 18% of AD, 33% of MCI due to AD, 29% of MCI not due to AD, 33% of FTD, 33% of patients with other dementias. Two HC had a positive amyloid-PET scan. To date, the diagnosis was re-evaluated post-amyloid imaging in 40 patients, and 18F-florbetapir results led to a change in diagnosis in 42% of these patients. The diagnostic confidence increased significantly after amyloid imaging for both confirmed and changed clinical diagnoses (15% and 17% increase in confidence respectively, p<0.0005). Amyloid PET positivity had a significant impact on the therapeutic plans of patients with an initial diagnosis of AD, MCI due to AD or DLB, with an increase of 29% in the prescription of AChE (p=0.01). **Conclusions:** 18F-Florbetapir PET has a significant impact on diagnosis, diagnostic confidence and treatment plan of dementia experts.

IC-P-002 | DEMENTIA EXPERTS' PERCEIVED DIAGNOSTIC VALUE OF PET AMYLOID IMAGING

Cristina Muscio[1], **Marina Boccardi**[1], Michela Pievani[2], Patrizio Pasqualetti[3], Samantha Galluzzi[2], Barbara Borroni[4], Alessandro Padovani[4], Giovanni Frisoni[5], [1]*LENITEM, Brescia, Italy;* [2]*Laboratory of Epidemiology, Neuroimaging and Telemedicine, IRCCS Centro San Giovanni di Dio Fatebenefratelli, The National Center for Research and Care of Alzheimer's and Mental Diseases, Brescia, Italy;* [3]*AFaR-CRCCS, Ospedale Fatebenefratelli, Rome, Italy;* [4]*Centre for Neurodegenerative Disorders, Neurology Unit, University of Brescia, Brescia, Italy;* [5]*Memory Clinic and LANVIE - Laboratory of Neuroimaging of Aging, University Hospitals and University of Geneva - Laboratory of Epidemiology, Neuroimaging and Telemedicine, IRCCS Centro San Giovanni di Dio Fatebenefratelli, The National Center for Research and Care of Alzheimer's and Mental Diseases, Brescia, Italy.*
Contact e-mail: *mboccardifbf@googlemail.com*

Background: Amyloid PET imaging is a biomarker of amyloid pathology and can assist in the differential diagnosis of Alzheimer's Disease (AD) from other non-AD dementias. Evidence that amyloid PET has an impact on the diagnostic thinking of dementia experts is starting to emerge but is still limited (Vandenberghe et al., 2013; Grudman et al., 2012). This study was aimed at assessing whether amyloid positivity/negativity has an impact on the diagnostic thinking of dementia experts (DEs) as assessed through an ad-hoc questionnaire. **Methods:** This study was carried out in the context of a larger one on the diagnostic valueof amyloid PET imaging in Eastern Lombardy, Italy. Twenty-two DEs of second level referral centres participated to the study. Six clinical case-vignettes representative of patients with diagnostic uncertainty were developed and submitted to the DEs. Each case-vignette included the following information: patient's age, sex, cognitive/behavioural symptoms, FDG-PET and MRI results, and initial diagnosis before amyloid-PET scan. DEs were then asked to rate the probability (from 0 to 100) of a change in diagnosis after knowledge of amyloid-PET results (positive Aβ+/negative Aβ-). **Results:** When assessing the 6 case-vignettes, the highest probability of a change in diagnosis was for cases with an initial diagnosis of (i) AD with atypical profile (logopenic variant) and Aβ- (66% probability), and of (ii) subcortical ischemic vascular dementia and Aβ+ (62%). There was no significant difference between the two case-vignettes (p>0.05 on post-hoc ANOVA). The lowest probability was in the cases with an initial diagnosis of (iii) LBD and Aβ- (14%), and of (iv) AD and Aβ- (33%). These case-vignettes were significantly different from case-vignettes (i) and (ii) (p<0.01). For cases with an initial diagnosis of bvFTD and CBD and Aβ+ the probability of a change in diagnosis was intermediate (43 and 44%). These values were significantly higher compared with those of case-vignette (iii) (p<0.01). **Conclusions:** Amyloid biomarkers proved to be most informative to rule out an AD etiology in cases with atypical AD, and to support an AD etiology in cases with a non-AD dementia. A change in the diagnosis was less frequent in cases of suspected non-amyloid pathology.

IC-P-003 | RELATIONSHIP OF MEDIAL TEMPORAL VOLUME TO MEAN BRAIN AMYLOID CONCENTRATION, APOE GENOTYPE, AND DISEASE STAGE IN ADNI

Ranjan Duara[1], David Loewenstein[2], Mohammed Goryawala[3], Warren Barker[1], Malek Adjouadi[3], [1]*Mount Sinai Medical Center, Miami Beach, Florida, United States;* [2]*University of Miami School of Medicine, Miami, Florida, United States;* [3]*Florida International University, Miami, Florida, United States.* Contact e-mail: *duara@msmc.com*

Background: The amyloid cascade hypothesis of Alzheimer's Disease was initially proposed over 20 years ago. Recent data from studies such as the Alzheimer's Disease Neuroimaging Initiative (ADNI) suggest that the relationship between brain amyloid burden, biomarkers of neurodegeneration, genetics, age and disease stage may be complex. **Methods:** Data used in this study, including brain measures, was downloaded from the ADNI public database. Subjects were 154 with late mild cognitive impairment (lMCI), 238 with early MCI (eMCI), and 183 who were cognitively normal (CN). Neuropsychological evaluations included tests of memory (Rey Auditory Verbal Learning Test) and executive function (Trails B score). Subjects also had an F-18 AV-45 amyloid PET scan, an FDG PET scan and a structural MRI scan. Imaging measures included hippocampal volume, the average normalized CMRglu of 6 AD-sensitive regions, and average SUVR for the amyloid scans of the following regions: anterior and posterior cingulate, prefrontal, lateral temporal and parietal (AV-45 SUVR). Path analysis was carried out to explore the dependencies of cognitive scores