Supplementary Table 8. Accuracy figures of 18F-FDG PET for conversion from MCI to AD dementia and other types of dementia (combined AD dementia plus mainly FTD and LBD) at study level

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Metrics**  **(analytic approach/image analysis)** | | **Study ID** | **Participants (No. of 18F-FDG PET positive\*)** | **Age**  **years** | **Accuracy at study level** | | | |  |
| **Sensitivity (%)** | **Specificity (%)** | **No.**  **with**  **MCI converted (%%** | **No.**  **with**  **MCI**  **stable** | **Duration of follow-up**  **Mean, Range, Maximum**  **(months)** |
|  | **Computer aided visual read** | | | | | | | | |
| sc-SPM | | Cerami 2015 | 38 (24) | 70±5.7 | 100 | 74 | 19 (50) | 19 | Mean  28.5±7.8 |
| Clerici 2009 | 26 (23) | 26.2±1.7 | 95 | 29 | 19 (73) | 7 | Maximum  18 for aMCI  37 for snaMCI |
| Perani 2014 | 28 (18) | 71±5.7 | 100 | 48 | 7 (25) | 21 | Mean 27.6±4.1 |
| Neurostat/  3DD-SSP | | Grimmer 2016 | 28 (16) | 62±7.3  Range 50-78 | 75 | 56 | 12 (43) | 16 | Maximum  24 |
| Pardo 2010 | 18 (7) | Mean 80  Range 54-83 | 46 | 80 | 13 (72) | 5 | Maximum  36 |
| SUVr/ROI/VROI | | Ossenkoppele 2012 | 12 (4) | 67±7.0 | 60 | 86 | 5 (42) | 7 | Mean  30  Range  24-48 |
|  | **Fully automated read** | | | | | | | | |
| t-sum/HCI | | Galluzzi 2010 | 38 (28) | 72.0±7.1 | 75 | 28 | 20 (53) | 18 | Mean  21.5±10.2 |
|  | **Combined metrics** | | | | | | | | |
| Combined SUVr & t-sum | | Ossenkoppele 2012a | 12 (5) | 64.0±9.0 | 71 | 100 | 7 (58) | 5 | Maximum  24 |

18F-FDG PET, fluorine-18-2-fluoro-2-deoxy-D-glucose positron emission tomography; MCI, mild cognitive impairment; aMCI amnestic MCI; snaMCI, single non-amnestic MCI; AD, Alzheimer’s disease; FTD, frontotemporal dementia; LBD, Lewy body disease; 3D-SSP, three-dimensional stereotactic surface projection; sc-SPM, single-case statistical parametric map; SUVr, standardized uptake value ratio; ROI, region of interest; VROI, volume region of interest; HCI, hypometabolic convergence index

Notes

One study [54] evaluated only the accuracy of 18F-FDG PET for conversion to all subtypes of dementia (AD dementia; FTD; LBD). In addition to evaluating the accuracy of 18F-FDG PET for conversion to Alzheimer’s disease, seven studies [44, 48, 62, 73, 79-81] also reported the accuracy for conversion to all subtypes of dementia. The values for sensitivity and specificity ranged from 46% to 100% and from 28% to 100%, respectively.