CASES OF POSTERIOR CORTICAL ATROPHY WITH AND WITHOUT AMYLOID PATHOLOGY: IS THERE ANY DIFFERENCE?

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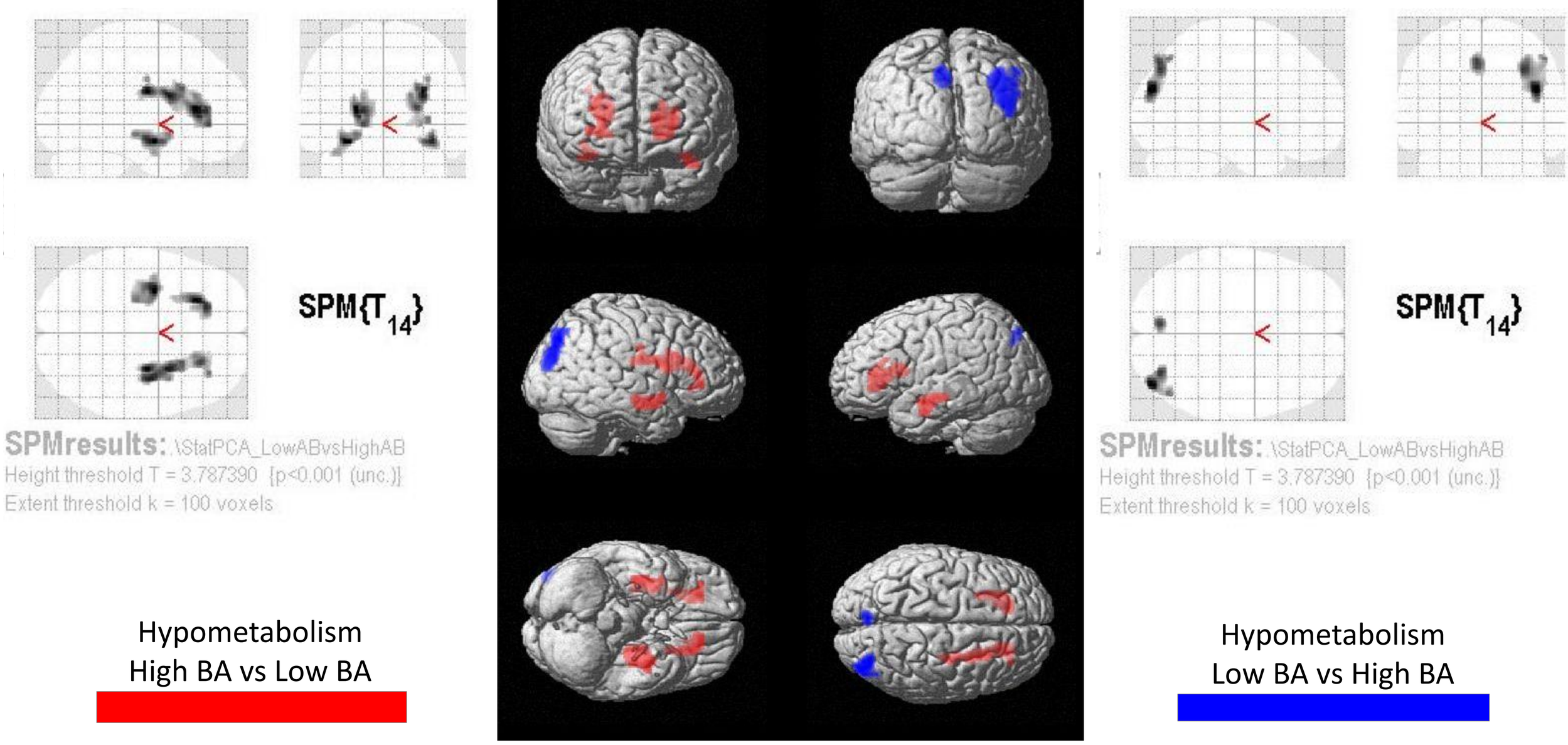
Background

Posterior cortical atrophy (PCA) is a rare variant of Alzheimer's disease characterized by predominant complex visuo-spatial deficits and parieto-occipital or temporo-occipital cortical atrophy[1]. As in typical Alzheimer's disease, amyloid cascade with deposition of plaques and tangles seems to play a key role in pathogenesis of PCA. However, a minority of cases without evidence of amyloid deposition may present with similar clinical manifestations[2].
We describe 6 out of 16 cases of PCA without evidence of amyloid pathology on cerebrospinal fluid (CSF) analysis.

Materials and Methods

All the patients underwent a neurological examination, neuropsychological evaluation, brain imaging consistent with brain MRI or CT, brain FDG-PET and lumbar puncture. FDG-PET images were analyzed using statistical parametric mapping (SPM8, Wellcome Department of Imaging Neuroscience, London).



Results

We identified 16 patients with a clinical diagnosis of PCA, according to 2012 UCL criteria[3]. CSF analysis showed a pattern of amyloid pathology in 10 cases, while 6 patients had normal Aβ42 levels. The two groups were not significantly different from a clinical point of view, but they showed a different pattern on FDG-PET: patients with normal Aβ42 levels had a higher temporal and insular hypometabolism bilaterally, while patients with low Aβ42 had a higher right posterior parietal and left mesial parietal hypometabolism. Moreover, considering all the patients together, parietal hypometabolism on FDG-PET correlates with low Aβ42 CSF levels.

Conclusions

There are cases of PCA without evidence of amyloid pathology and they have a different hypometabolism pattern on brain FDG-PET, involving insular and temporal region. Follow-up will allow us to describe how these forms will evolve. Patients with amyloid pathology have a higher hypometabolism in parietal areas respect patients without amyloid pathology; the right parietal area is the same area in which hypometabolism is correlated with low Aβ42 on CSF in all PCA.

References

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