PROGRESSIVE SUPRANUCLEAR PALSY-PARKINSONISM EVOLVING FROM PARKINSON DISEASE: A FOLLOW-UP STUDY

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Dubium sapientiae initium

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BACKGROUND

In the early stage of the disease, patients with progressive supranuclear palsy-parkinsonism (PSP-P) shows a clinical picture similar to that observed in patients with Parkinson disease (PD) characterized by asymmetrical onset, resting tremor, rigidity, moderate initial response to levodopa, and a longer survival compared with Richardson syndrome.[1] Clinical features suggestive of PSP as postural instability with backward falls or abnormalities of vertical gaze occur later or never in patients with PSP-P.[1] The absence of these peculiar PSP signs does not allow to distinguish patients with PSP-P from those with PD and it is probable that an uncertain number of PSP patients is misdiagnosed as PD.

OBJECTIVE

To identify the frequency of patients with clinical diagnosis of PD that developed clinical features of PSP-P during a follow-up period of 4 years.

METHODS

At baseline, 102 patients with clinical diagnosis of PD were enrolled in the current study. Each patient was clinically assessed every year for an observational period of 4 years. All patients performed MRI at baseline and at the end of follow-up period but also at the appearance of clinical features suggestive of PSP. Magnetic resonance parkinsonism index (MRPI) and midbrain to pons area ratio (M/P), MR imaging measures useful for diagnosing PSP,[2,3] were calculated for each MR examination.

RESULTS

At the end of follow-up period, 96 out of 102 (94.1%) patients continued to have a phenotype of PD whereas the remaining 6 (5.9%) patients developed clinical features suggestive of PSP-P. MRPI values allowed accurately ($P < 0.001$) to distinguish patients that evolve into PSP-P phenotypes from those patients who remained with clinical diagnosis of PD (Figure 1). Indeed, MRPI appeared to be much more accurate ($P = 0.002$) than M/P ($P = 0.053$) to identify the patients that developed clinical features of PSP-P (Figure 2).

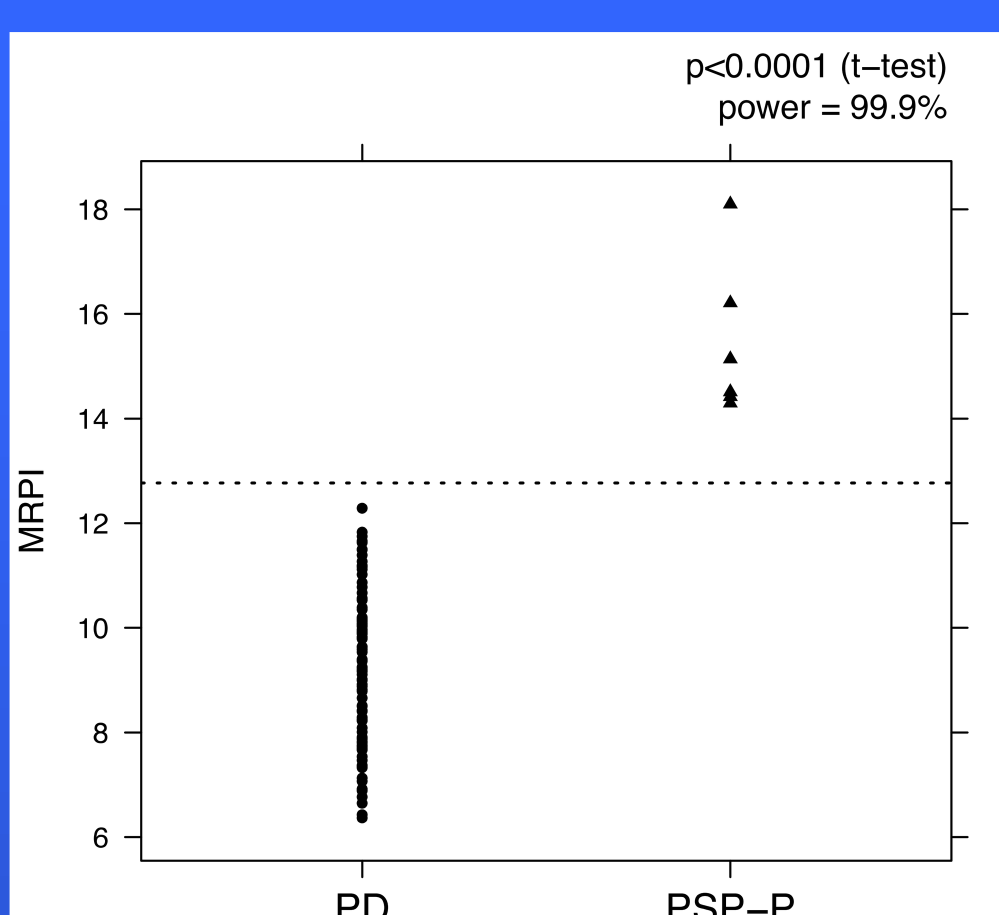

Figure 1. Magnetic resonance parkinsonism index values in patients with Parkinson disease and in patients with clinical signs of PSP-P at the end of 4-years follow-up

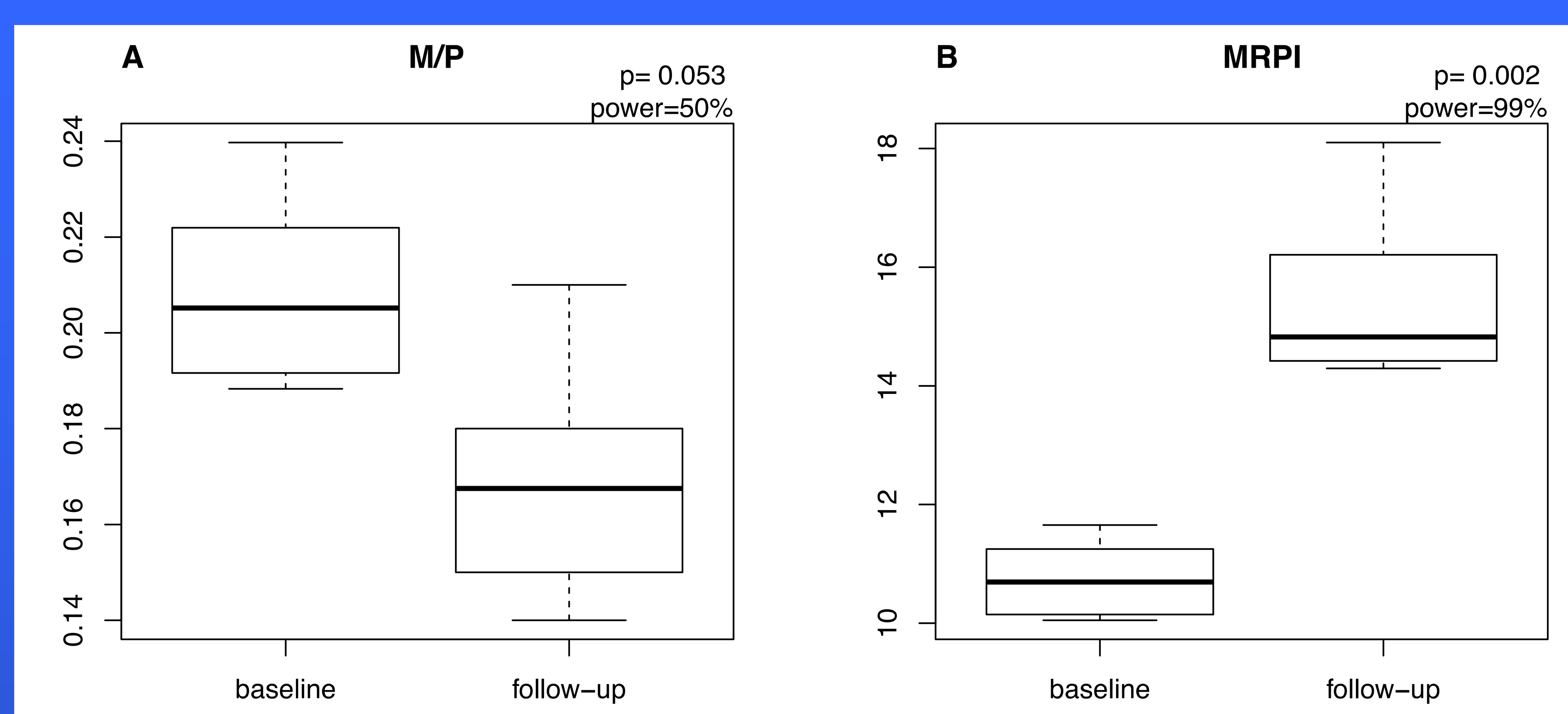

Figure 2. Midbrain to pons area ratio (A) and magnetic resonance parkinsonism index (B) measurements at baseline and at 4-years follow-up in patients developing clinical signs of PSP-P.

CONCLUSIONS

Our results show that a small number of patients initially classified as PD may develop clinical and radiological features of PSP-P during a follow-up period of 4 years. The MRPI confirms a MR measure more accurate than M/P to identify patients with clinical features suggestive of PSP phenotypes.

REFERENCES

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3. Quattrone A, Morelli M, Williams DR et al. MR parkinsonism index predicts vertical supranuclear palsy in patients with PSP-parkinsonism. Neurology 2016; 87: 1266-1273.

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