Pathogenesis of mild parkinsonian signs in aging

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Dear Sirs,

In their recent study on the evolution of mild parkinson signs (MPS) in aging, Mahoney et al. [4], in a cohort of 210 healthy older adults, none of them demented, MPS were observed in 45 %, 38 % of whom were transient (mean age 75.8 ± 7.37 years), while 61 % were persistent (mean age 79.8 ± 7.15 years). For the onset of MPS vascular mechanisms due to cardiovascular disease were suggested, and probably neurodegenerative mechanisms for the persistence of MPSs, while others suggested a multifactorial etiopathogenesis of MPS in the elderly [3]. Unfortunately, no neuropathologic findings were available in this study.

In an autopsy study of 160 elderly subjects (mean age 84.1 ± 8.3 SD years), 94.4 % being demented, clinical MPS (rigidity, bradykinesia, flexed posture, frequent gait disorders, but almost no rest tremor) were reported in 21.9 %. Patients with MPS were slightly older than those without (mean age 86.7 ± 66.6 vs. 83.69 ± 8.0 SD years; difference not significant). Neuropathologic examination classified MPS+ cases as “pure” AD without additional α -synuclein (α Syn) pathology (51 %), AD with incidental Lewy pathology (15 %), while early stages of PD or DLB were present in 33 %. MPS—cases included “pure” AD (74.6 %) and AD with incidental Lewy pathology (23 %), while none of both groups had a pathologic diagnosis of vascular or mixed type dementia [1]. MPS were only slightly more frequent in cases with higher neurofibrillary Braak stages. MPS correlated best with substantia nigra (SN) cell loss ($p < 0.001$) and much less with α Syn

pathology in brainstem ($p < 0.5$). Although both pathologies in SN correlated with neuron loss ($p < 0.001$), nigral tau lesions, present in 88.5 % of MPS+ cases (without α Syn lesions in 55.6 %) did not correlate with MPS. Additional cerebrovascular changes did not influence the development of MPS symptoms. With other recent data [2, 5, 6], these results suggest that neuronal loss in SN, partly related to tau pathology, is a major pathological substrate of MPS, at least in demented elderly subjects, although some patients with and without MPS may show no or only minimal nigral lesions. MPS in elderly patients may thus be a surrogate marker for severe neuritic AD pathology.

Conflicts of interest The author has no conflict of interest to disclose.

Ethical standard The manuscript does not contain clinical studies or patient data.

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