

Negative DAT-SPECT in old onset Parkinson's disease: an additional pitfall?

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Introduction: Scans without evidence of dopaminergic deficit (SWEDD) refer to patients clinically diagnosed with Parkinson's disease (PD), but showing normal findings on dopamine transporter single-photon emission computed tomography (DATSPECT). SWEDD remains a heterogeneous and highly debated entity and there are some indications that a few patients with SWEDD could truly have PD implying that, at least in the early stage of PD, a DAT-SPECT scan may be normal. Interestingly, it is acknowledged that compensatory downregulation of DAT in the early stages of PD seems to be less efficient in older-onset than in young-onset patients. Recent findings suggesting that DAT-SPECT does not reflect either nigral cell bodies or striatal fibers of dopaminergic nigrostriatal neurons might improve our understanding of this phenomenon.

Methods: We report eight patients with old-age PD diagnosis (mean age at onset was 80.8±2.9 years), confirmed during a long-term clinical follow-up and with a positive response to levodopa in which baseline DAT-SPECT was normal both visually and semiquantitatively. Two subjects demonstrated an abnormal scan when repeated later.

Conclusions: Our study suggests that old onset PD could account for some patients with SWEDD because of the co-occurrence of an age-related failure of striatal compensatory strategies to counteract striatal dopamine decline in the early stages of PD.