Severity of neuropsychiatric symptoms and dopamine transporter levels in dementia with Lewy bodies: a 123I-FP-CIT SPECT study.

Abstract:
Neuropsychiatric symptoms are frequent in dementia with Lewy bodies (DLB). Dopamine transporter (DAT) imaging with (123)I-labeled ligand N-delta-(fluoropropyl)-2 beta-carbomethoxy-3beta-(4-iodophenyl)tropene ((123)I-FP-CIT), which reliably measures midbrain dopaminergic dysfunction, has provided important evidence on the neurobiological substrate of some of these symptoms including apathy and depression. However, little is known on DAT levels and other distressing symptoms such as delusions and hallucinations. Therefore, (123)I-FP-CIT imaging was performed in 18 well-characterized patients with DLB, and striatal DAT levels were correlated with the frequency/severity ratings of several neuropsychiatric symptoms. A wide range of neuropsychiatric symptoms could be observed in the sample. Significant correlations were observed between decreased striatal DAT levels and visual hallucinations. Although there were no correlations between striatal DAT levels and other neuropsychiatric symptoms, when considering the putamen and the caudate nucleus separately, delusions, depression, and apathy were inversely correlated to decreased caudate DAT levels. The results provide intriguing evidence on the involvement of the mesocortical dopaminergic pathways in neuropsychiatric symptoms in DLB.