

1-2020

Improving the Accuracy of DaT Scan Interpretation: a retrospective study to identify variables that standardize the review of DaT scans for idiopathic Parkinson's disease

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Recommended Citation

Hackbart, Hannah; Newberg, MD, Andrew B.; and Liang, MD, Tsao-Wei, "Improving the Accuracy of DaT Scan Interpretation: a retrospective study to identify variables that standardize the review of DaT scans for idiopathic Parkinson's disease" (2020). *Phase 1*. Paper 60.

https://jdc.jefferson.edu/si_ctr_2022_phase1/60

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Improving the Accuracy of DaT Scan Interpretation: a retrospective study to identify variables that standardize the review of DaT scans for idiopathic Parkinson's disease.

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Introduction: Until recently, the diagnosis of Parkinson's disease (PD) has been based solely on clinical observation. The DaT scan is a tool that allows clinicians to visualize areas of neurodegeneration in PD and can help guide diagnosis. However, there is a discordance between clinical judgement and interpretation of DaT scans. In this study, we aim to improve the utility of DaT scans in the diagnosis of PD by identifying factors that can lead to a misdiagnosis and determine which image findings predict a clinical syndrome of parkinsonism.

Methods: We will conduct a retrospective chart review to analyze DaT scans of 100 patients clinically diagnosed with PD. We will calculate the initial SN/SP/PPV/NPV for diagnoses based clinically compared to scan. We will then blindly review and reclassify all scans as definitely abnormal, definitely normal, or indeterminate. We will then recalculate a revised SN/SP/PPV/NPV to see if these values changed following reanalysis. From the discordant scans, we will attempt to identify factors that can further assist in interpreting DaT scans.

Results: Patients have been identified and we are in the process of extracting data. We anticipate that after systematic, careful re-review, the specificity of DaT scans will be higher, due to improvement in identifying positive scans.

Discussion: Imaging can be costly and cumbersome for patients and clinicians alike. Currently, DaT scans do not offer an improved accuracy in diagnosis over clinical judgement. If the interpretation of DaT scans can be optimized, they will be of greater utility to both patients and physicians.