PARKINSON'S PROGRESSION MARKERS INITIATIVE

Play a Part in Parkinson's Research

SPECT Visual Interpretation (VI) Assessment

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Summary

SPECT imaging was acquired at PPMI imaging centers per the PPMI imaging protocol and sent to the imaging core lab at the Institute for Neurodegenerative Disorders (IND) for visual interpretation. All SPECT images read for visual assessment of dopamine transporter deficit were reviewed per the procedure detailed in the methods section.

Method

Visual assessment of screening and visit 6 (SWEDDs only) SPECT imaging for determination of dopamine transporter deficit was performed at IND by two expert readers in the field of nuclear medicine. Scans were read as either showing evidence of dopamine transporter deficit (i.e. abnormal) or not showing evidence of dopamine transporter deficit (i.e. normal.). 123I-DaTscan™ was used as the radiotracer for DAT SPECT imaging. Select sites were approved for use of 99mTc-TRODAT-1 due to limited availability of 123I-DaTscan™.

Normal images are characterized by two relatively symmetric comma or crescent-shaped focal regions of radiotracer uptake mirrored about the midline in transaxial images. Striatal uptake, comprising both the caudate and putamen, is distinctly evident compared to surrounding brain tissue.

Abnormal images typically fall into at least one of the following three general categories:

Activity is asymmetric, e.g. uptake in the region of the putamen of one hemisphere is absent or greatly reduced with respect to the other. Uptake is still visible in the caudate nuclei of both hemispheres resulting in a comma or crescent shape in one and a circular or oval focus in the other. There may be reduced uptake between at least one striatum and surrounding tissues.

Ioflupane uptake is absent in the putamen of both hemispheres and confined to the caudate nuclei. The signal is relatively symmetric and forms two roughly circular or oval foci. Uptake of one or both is generally reduced.

Uptake is absent in the putamen of both hemispheres and greatly reduced in one or both caudate nuclei. Uptake of the striata with respect to the background is reduced (1).

References

1. DaTSCAN™ [package insert]. Arlington Heights, IL: GE Healthcare; 2011.