

SUPPLEMENTARY FILES

Supplementary Table 1 Discriminative measures of FDG PET and MIBG scintigraphy

Analysis	Modality	ROC AUC	Sensitivity	Specificity	PPV	NPV	LR+	LR-
C	MIBG	0.71 (0.55-0.87)	0.94 (0.48-1.00)	0.53 (0.327-0.95)	0.76 (0.70-0.95)	0.83 (0.51-1.00)	1.97 (1.28-3.54)	0.12 (0.00-0.38)
	FDG	0.84 (0.70-0.98)	0.97 (0.87-1.00)	0.74 (0.53-0.95)	0.86 (0.77-0.96)	0.93 (0.76-1.00)	3.68 (1.88-9.27)	0.04 (0.00-0.16)
D	MIBG	0.68 (0.51-0.85)	0.94 (0.45-1.00)	0.47 (0.29-0.94)	0.76 (0.71-0.95)	0.80 (0.45-1.00)	1.77 (1.18-3.09)	0.15 (0.04-0.45)
	FDG	0.82 (0.67-0.98)	0.97 (0.77-1.00)	0.71 (0.47-0.94)	0.86 (0.78-0.97)	0.92 (0.67-1.00)	3.29 (1.88-12.66)	0.05 (0.00-0.18)

Values in parentheses give 95% confidence intervals. C, Analysis for the differentiation of Lewy body diseases versus atypical parkinsonian syndromes; D, analysis for the differentiation of Parkinson's disease versus atypical parkinsonian syndromes. *MIBG* MIBG scintigraphy, *FDG* FDG positron emission tomography, *ROC AUC* area under the receiver operating characteristic curve, *PPV* positive predictive value, *NPV* negative predictive value, *LR+* positive likelihood ratio, *LR-* negative likelihood ratio.

Supplementary Table 2 Discriminative measures of MIBG scintigraphy for each center

Analysis	Center	ROC AUC	Sensitivity	Specificity	PPV	NPV	LR+	LR-
A	both	0.69 (0.53-0.85)	0.91 (0.47-1.00)	0.53 (0.32-0.95)	0.78 (0.71-0.94)	0.77 (0.47-1.00)	1.92 (1.26-3.53)	0.17 (0.00-0.45)
	Freiburg	0.72 (0.49-0.96)	0.90 (0.32-1.00)	0.57 (0.43-1.00)	0.85 (0.81-1.00)	0.67 (0.35-1.00)	2.09 (0.88-4.98)	0.18 (0.04-0.79)
	Würzburg	0.69 (0.48-0.91)	0.93 (0.47-1.00)	0.50 (0.25-1.00)	0.70 (0.63-1.00)	0.86 (0.56-1.00)	1.87 (1.04-3.34)	0.13 (0.02-0.96)

Values in parentheses give 95% confidence intervals. A, Analysis for the differentiation of Lewy body diseases versus diseases without Lewy bodies. *ROC AUC* area under the receiver operating characteristic curve, *PPV* positive predictive value, *NPV* negative predictive value, *LR+* positive likelihood ratio, *LR-* negative likelihood ratio.

Supplementary Data 1 Template of the case vignette for rating of clinical follow-up

diagnosis

Gender	<i>(female / male)</i>
Year of birth	<i>(year)</i>
Year of the last diagnosis:	<i>(year)</i>
Age at diagnosis:	<i>(years)</i>
Year of first symptoms:	<i>(year)</i>
Age at first symptoms:	<i>(years)</i>
First contact:	<i>(year)</i>
Last contact:	<i>(year)</i>
Year of death (if applicable):	<i>(year)</i>
General and neurological / psychiatric comorbidities:	
Medication at the time of first clinical contact: <i>(type, dose)</i>	
Device-aided therapies: <i>(type, year, effectiveness)</i>	
Date FDG PET:	<i>(mm/yyyy)</i>
Time from symptom onset until FDG-PET:	<i>(years)</i>
Time after FDG-PET in clinical observation:	<i>(years)</i>
Date MIBG scintigraphy:	<i>(mm/yyyy)</i>
Time from symptom onset until MIBG scintigraphy:	<i>(years)</i>
Time after MIBG scintigraphy in clinical observation:	<i>(years)</i>
Medication at the time of imaging: <i>(separated for FDG PET and MIBG scintigraphy, if applicable)</i>	

Supplementary Data 1 (continuation)

Yes	Feature
☐	(1) L-dopa response at dose (<i>dose</i>)
☐	(2) L-dopa response in % (<i>percentage in UPDRS III score</i>)
☐	(3) Family history of Parkinson's syndrome
☐	(4) Bradykinesia
☐	(5) Rigidity
☐	(6) Isometric tremor
☐	(7) Rest tremor
☐	(8) Action tremor
☐	(9) Intention tremor
☐	(10) Unilateral disease onset
☐	(11) No highly acute onset
☐	(12) Progression of the disease
☐	(13) Postural instability
☐	(14) Persistent asymmetry
☐	(15) L-Dopa induced hyperkinesia
☐	(16) Hyposmia
☐	(17) Visual hallucinations
☐	(18) Obstipation
☐	(19) Urge incontinence
☐	(20) Depression
☐	(21) Restlessness
☐	(22) REM sleep behaviour disorder (RBD)

Supplementary Data 1 (continuation)

Yes	Feature
☐	(23) Ataxia
☐	(24) Gradual deterioration (acute occurrence of new symptoms)
☐	(25) Repeated head trauma
☐	(26) History of encephalitis
☐	(27) Permanent remission of symptoms
☐	(28) Supranuclear gaze palsy
☐	(29) Occurrence of dementia after onset of disease: (<i>years</i>)
☐	(30) Impairment of the upper motor neuron
☐	(31) Impairment of the lower motor neuron
☐	(32) Positive pyramidal tract sign (Babinski)
☐	(33) Structural abnormality of the cerebellum (e.g. neoplasm)
☐	(34) Hydrocephalus
☐	(35) Pure unilateral impairment > 3 years
☐	(36) Falls > 1/year in the first 3 years
☐	(37) Parkinsonian features restricted to the lower limbs > 3 years
☐	(38) Cortical sensory loss
☐	(39) Apraxia
☐	(40) Aphasia
☐	(41) Improvement of symptoms after lumbar puncture (if available)
☐	(42) Rapid progression of gait impairment requiring regular use of wheelchair within 5 years of onset
☐	(43) Palilalia
☐	(44) Isolated freezing
☐	(45) Absence of progression of motor symptoms or signs over 5 years
☐	(46) Severe dysphonia within first 5 years
☐	(47) Stiff gait with knee-extended legs
☐	(48) Dyskinesia during L-dopa treatment
☐	(49) Fluctuating cognition
☐	(50) Psychotic symptoms without L-dopa
☐	(51) Psychotic symptoms during L-dopa treatment
☐	(52) Psychotic symptoms during neuroleptic treatment
☐	(53) Autonomic dysfunction
☐	(54) Severe dysphagia within first 5 years
☐	(55) Severe orthostatic dysregulation
☐	(56) Urinary retention
☐	(57) Anterocollis
☐	(58) Contractures
☐	(59) Myoclonia
☐	(60) Alien limb phenomenon
☐	(61) Pathological laughing or crying
☐	(62) Inspiratory stridor
☐	(63) Improvement of symptoms under alcohol consumption
☐	(64) Severe disability at disease onset
☐	(65) Decrease of tremor amplitude during distraction
☐	(66) Polymicromyoclonia

Supplementary Data 1 (continuation)

Diagnostics
Genetic findings, if available: <i>(year, report)</i>
Tilt table test, if available: <i>(year, report)</i>
Schellong Test, if available: <i>(year, report)</i>
Tremor analysis, if available: <i>(year, report)</i>
Electrophysiological examination, if available: <i>(year, report)</i>
Transcranial sonography, if available: <i>(year, report)</i>
cMRI, if available: <i>(year, report)</i>
cCT, if available: <i>(year, report)</i>
FP-CIT SPECT, if available: <i>(year, report)</i>
Sonographic assessment of urinary retention, if available: <i>(year, report)</i>