UPDRS

The Unified Parkinson's Disease Rating Scale (UPDRS) is a rating scale used to follow the longitudinal course of Parkinson's disease. The UPDRS is the most commonly used scale in the clinical study of Parkinson's Disease.

The UPDRS is made up of the following sections:

Part I: evaluation of Mentation, behavior, and mood;

Part II: self-evaluation of the activities of daily life (ADLs) including speech, swallowing, handwriting, dressing, hygiene, falling, salivating, turning in bed, walking, cutting food;

Part III: clinician-scored monitored motor evaluation;

Part IV: Hoehn and Yahr staging of severity of Parkinson's disease.

Part V: Schwab and England ADL scale.

These are evaluated by interview and clinical observation. Some sections require multiple grades assigned to each extremity.

Clinicians and researchers alike use the UPDRS and the motor section in particular to follow the progression of a person's Parkinson's disease. Scientific researchers use it to measure benefits from a given therapy in a more unified and accepted rating system. Neurologists also use it in clinical practice to follow the progression of their patients' symptoms in a more objective manner.

Following the UPDRS scores over time provides insight into the patient's disease progression. For instance Michael J. Fox's symptoms started with a slight tremor so his motor score would have been less than 10. For most patients, the “mentation, behavior and mood” scores increase later in the disease, but there is a subset for whom those symptoms develop early on.

Ishii et al aimed to investigate the characteristics of Parkinsonian features assessed by the unified Parkinson's disease rating scale (UPDRS) and determine their correlations with the computed tomography (CT) findings in patients with idiopathic normal pressure hydrocephalus (iNPH). The total score and the scores for arising from chair, gait, postural stability, and body hypokinesia in the motor examination section of UPDRS were significantly improved after shunt operations. Stepwise multiple regression analysis revealed that postural stability was the determinant of the gait domain score of the iNPH grading scale. The canonical correlation analysis between the CT findings and the shunt-responsive Parkinsonian features indicated that Evans index rather than midbrain diameters had a large influence on the postural stability. Thus, the pathophysiology of postural instability as a cardinal feature of gait disturbance may be associated with impaired frontal projections close to the frontal horns of the lateral ventricles in the iNPH patients [1)].

From 2008 to 2013, consecutive patients diagnosed with INPH based on clinical and radiological criteria were included in a single-centre study. All patients received programmable-valve ventriculoperitoneal shunts. Outcome measures were assessed at baseline, 3, 6 and 12months post-

operatively. Outcomes included gait time and scores on the Unified Parkinson's Disease Rating Scale part III (UPDRS-III), the Addenbrooke's Cognitive Examination Revised (ACE-R) and the Mini-Mental State Examination (MMSE). Thresholds for improvements were set a priori as ⩾20% decrease in gait time, ⩾10point decrease in UPDRS-III score, ⩾5point increase in ACE-R score and ⩾2point increase in MMSE score at last follow-up. The proportion of patients improving varied between measures, being gait time (60%), UPDRS-III (69%), MMSE (63%), and ACE-R (56%). Overall, improvement in at least one outcome measure was observed in 85% of patients and 38% improved in gait time, UPDRS-III score and cognitive scores. Only 15% of patients experienced no improvement on any measure. This study demonstrates that the majority of INPH patients can sustain improvements in multiple symptoms up to 12months after shunting [2].

1)
Ishii M, Kawamata T, Akiguchi I, Yagi H, Watanabe Y, Watanabe T, Mashimo H. Parkinsonian Symptomatology May Correlate with CT Findings before and after Shunting in Idiopathic Normal Pressure Hydrocephalus. Parkinsons Dis. 2010 Mar 10;2010. pii: 201089. doi: 10.4061/2010/201089. PubMed PMID: 20948890; PubMed Central PMCID: PMC2951141.
2)
Shaw R, Everingham E, Mahant N, Jacobson E, Owler B. Clinical outcomes in the surgical treatment of idiopathic normal pressure hydrocephalus. J Clin Neurosci. 2016 Feb 27. pii: S0967-5868(15)00717-1. doi: 10.1016/j.jocn.2015.10.044. [Epub ahead of print] PubMed PMID: 26935749.