



# Correlations of Initial Mentation Rating in UPDRS and Progression of Motor and Cognitive Functions in Parkinson's Disease

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**Objective:**

To investigate the reliability of the first item (intellectual impairment; mentation) in the Unified Parkinson's Disease Rating Scale (UPDRS) as correlated with the progression of motor and cognitive functions in patients with Parkinson's disease (PD).

**Background:**

The mentation (or intellectual impairment) item of UPDRS allows raters to assess patients cognitive and memory dysfunction. Some studies revealed that cognitive impairment was correlated with the progressions of PD motor symptoms. Using this single item as an indicator to predict such correlation may be useful in everyday clinical practice, though the reliability is not tested.

**Design/Methods:**

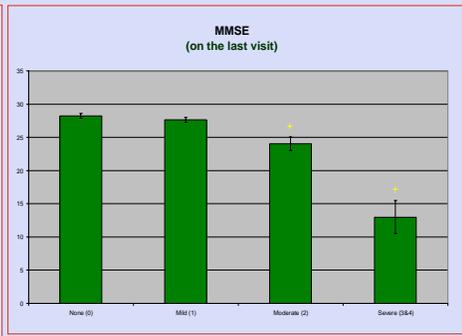
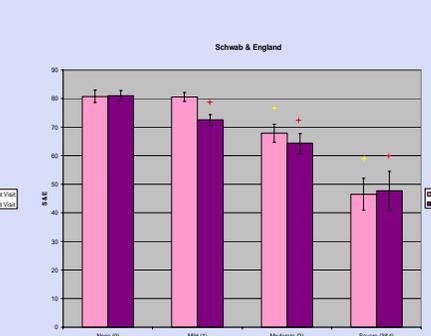
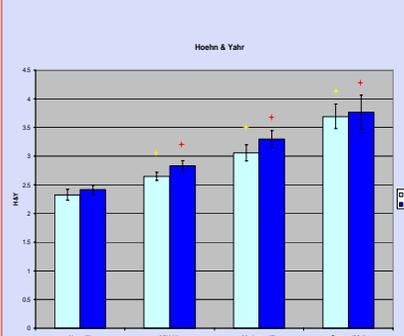
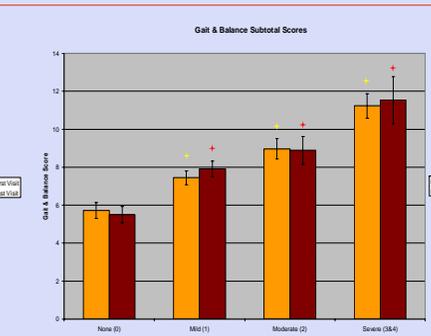
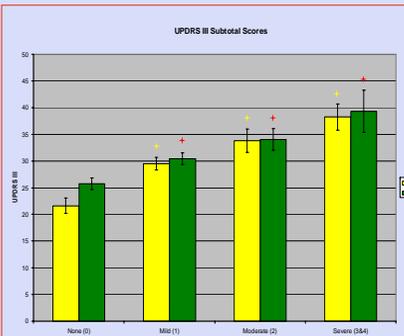
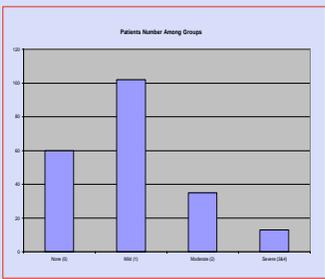
210 idiopathic PD patients were seen by movement disorder specialists from 2001 to 2006. The initial and most recent scores were collected. Mean duration of follow ups was about 30 months. Patients were divided into four groups: A) no dementia, mentation score 0; B) mild, 1; C) Moderate, 2; D) Severe, 3 & 4. UPDRS III motor subtotal scores of gait (items 27 to 31), HY scores and Mini Mental Status Exam (MMSE) were assessed for each group. The differences between groups were determined by analysis of variance.

**Results:**

Sixty patients were in group A; 102 in B; 35 in C; and 13 in D. At initial visits, mentation score is highly correlated with the mean UPDRS III: A) 21.6; B) 29.5; C) 33.8; D) 38.2 and subtotal scores of gait: A) 5.7; B) 7.4; C) 9.0; D) 11.2; and H&Y scores A) 2.3; B) 2.6; C) 3.0; D) 3.7. After average of 30 month-follow up, all UPDRS III, gait subtotal, H&Y and S&E scores showed similar pattern in all groups. However, 75% (45/60) of group A reported worsening of mentation (37 worsened by only 1 scale, with 28% in B), 20% in C, and none in D). Mean MMSE in the latest visits were A) 28.2; B) 27.7; C) 24.1; D) 13.0.

**Unified Parkinson's Disease Rating Scale (UPDRS)**

- UPDRS III: MOTOR SUBTOTAL SCORE**
1. Initiation of movement
  2. Freezing
  3. Postural instability with gait or balance (not counting falls or use of other devices)
  4. Motor fluctuations (on/off medication and motor fluctuations) and other dyskinesias (not counting falls or use of other devices)
  5. Gait
  6. Total score (sum of items 1-5)
- UPDRS I: MENTATION**
1. Memory
  2. Attention
  3. Executive functions
  4. Judgment and problem solving
  5. Visuospatial abilities
  6. Total score (sum of items 1-5)
- UPDRS II: DAILY LIVING ACTIVITIES**
1. Activities of daily living (not counting falls or use of other devices)
  2. Activities of daily living (not counting falls or use of other devices)
  3. Activities of daily living (not counting falls or use of other devices)
  4. Activities of daily living (not counting falls or use of other devices)
  5. Activities of daily living (not counting falls or use of other devices)
  6. Total score (sum of items 1-5)
- UPDRS IV: SWAYING**
1. Swaying
  2. Swaying
  3. Swaying
  4. Swaying
  5. Swaying
  6. Total score (sum of items 1-5)
- UPDRS V: FALLS**
1. Falls
  2. Falls
  3. Falls
  4. Falls
  5. Falls
  6. Total score (sum of items 1-5)
- UPDRS VI: GAIT**
1. Gait
  2. Gait
  3. Gait
  4. Gait
  5. Gait
  6. Total score (sum of items 1-5)
- UPDRS VII: COGNITIVE FUNCTIONS**
1. Cognitive functions
  2. Cognitive functions
  3. Cognitive functions
  4. Cognitive functions
  5. Cognitive functions
  6. Total score (sum of items 1-5)
- UPDRS VIII: MOTOR FLUCTUATIONS AND OTHER DYSKINESIAS**
1. Motor fluctuations and other dyskinesias
  2. Motor fluctuations and other dyskinesias
  3. Motor fluctuations and other dyskinesias
  4. Motor fluctuations and other dyskinesias
  5. Motor fluctuations and other dyskinesias
  6. Total score (sum of items 1-5)



✦ ✦ p < 0.05, compared to None (0) group in their corresponding visits.

**CONCLUSION:**

Our study shows that mentation rating has a high correlation with the severity of PD motor symptoms. After 30-month follow-ups, the motor symptoms remained fairly stable, probably due to specialized care from our Parkinsons Center. In spite of this, patients subjective cognitive functions deteriorated. It is especially notable for those who initially were normal in cognition but later reported mild progression. Still, mentation rating correlates with their cognitive functions reliably, as measured by MMSE. We conclude that UPDRS item mentation is a reliable predictor of the motor and cognitive functions for PD patients.

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