

# Correlations of Serum Uric Acid Levels with Parkinson's Disease Symptom Severity

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## Objective:

Serum uric acid (UA) has been found in lower levels in some neurodegenerative diseases, including Parkinson's disease (PD). We hypothesized that serum UA levels might be lower in advanced PD compared to those in earlier stages.

## Background:

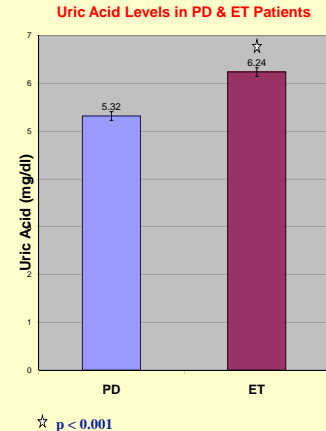
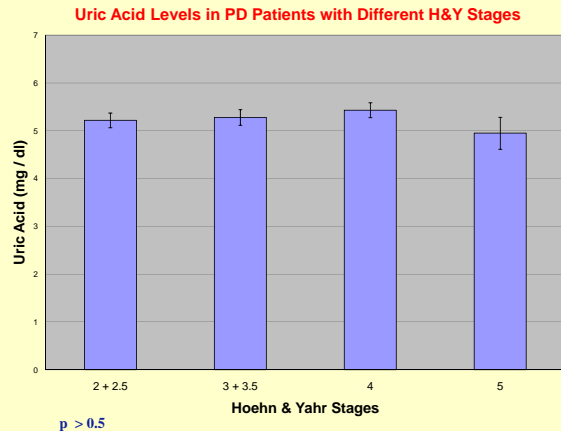
UA, a natural antioxidant and free radical scavenger, may attenuate the dopaminergic neuronal degeneration resulted from oxidative stresses. Lower serum UA in PD had been noted from various studies. We previously presented preliminary data showing that PD patients had lower UA levels than ET patients. Another study showed higher UA might slow PD symptom progression. Whether serum UA levels correlate with the different stages of PD has not been investigated.

## Design/Methods:

A retrospective review was conducted. 174 PD patients followed in our Parkinson's Clinic between 10/2001 and 03/2008 with available serum UA levels were selected. They were divided into 4 groups according to their latest Hoehn & Yahr (H&Y) stages: A) 2+2.5, B) 3+3.5, C) 4, D) 5. Mean serum UA levels, ages and durations of PD were recorded. The Kruskal-Wallis Test was used for statistical analysis.

## Demographic Data of Parkinson's Disease Patients According to H & Y

H & Y	2 + 2.5	3 + 3.5	4	5
Number (n)	59	45	53	17
Age (Years)	73.3	78.14	78.45	80.31
Duration (Years)	7.1	9.44	10.2	11



## Results:

- Patient numbers in each group was A)59, B)45, C)53, D)17.
- Mean UA level in each group was A) 5.22, B) 5.29, C) 5.41, D) 4.95 mg/dl (p>0.1).
- Mean age was 73.30, 78.14, 78.45 & 80.31 years, respectively (p<0.05).
- Mean duration of PD was 7.10, 9.44, 10.20, 11.00 years, respectively (p<0.01).
- PD patients overall had mean UA of 5.32 mg/dl, compared to 6.24 mg/dl from 227 ET patients (p<0.001).

## Conclusions:

- Our data demonstrated that H&Y stages were correlated with patients' ages and the durations of their PD.
- However, they were not significantly correlated with UA levels, except a trend of lower value in stage 5 patients.
- A larger scale study by using the Unified Parkinson's Disease Rating Scale is underway for further clarification on the relationship of UA levels and PD progression.

## References:

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