



Higher Usage Rate of Diuretics and Higher Uric Acid Levels Are Seen in Essential Tremor Compared to Parkinson's Disease Patients

Jyhong Gabriel Hou, MD, PhD and Eugene C. Lai, MD, PhD

Parkinson's Disease Research, Education and Clinical Center (PADRECC), Michael E. DeBakey Veterans Affairs Medical Center
Baylor College of Medicine, Houston, Texas

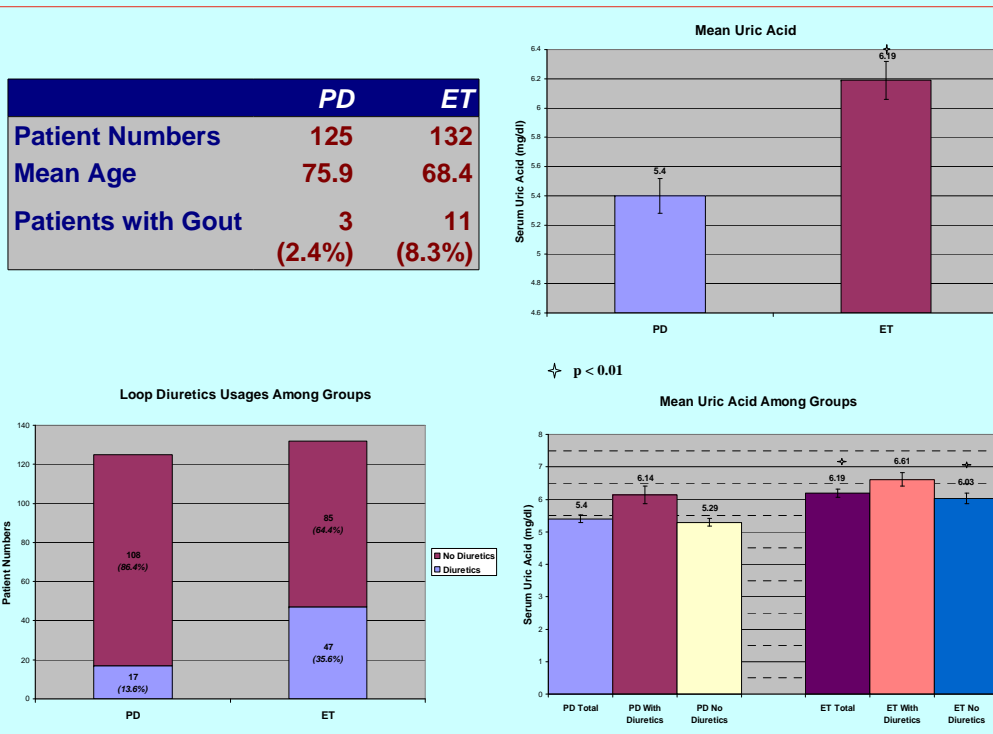


Objective & Background:

Studies have linked low serum uric acid level in patients with Parkinson's disease (PD). Uric acid (UA), a natural antioxidant and free radical scavenger, has been proposed to attenuate the dopaminergic neuronal degeneration seen in PD. We hypothesized that patients with essential tremor (ET), the mechanism of which is not likely to involve dopaminergic degeneration, might have higher serum UA levels than those of PD patients. Loop diuretics are extrinsic factors to raise plasma UA level. Their effects on UA levels in these two different disease entities were also investigated.

Design/Methods:

We collected the UA values from 125 PD and 132 ET patients who visited our Parkinson's Clinic between 10/2001 and 03/2008. Their clinical diagnoses were confirmed by movement disorder specialists. If there were two or more values of UA levels for the same patients, the mean values were calculated. Patients with both PD and ET were excluded. History of exposure to loop diuretics in these two groups of patients was reviewed from their electronic medical records. Significance of the difference between the mean UA values of the two groups was analyzed by the Student's t-test.



Results:

- The mean ages of PD patients and ET patients were 75.9 years and 68.4 years, respectively.
- Only 3 PD patients had gouty arthritis and were active on allopurinol or probenecid, UA lowering agents. 11 ET patients had the diagnosis of gout.
- The mean UA level of the PD group was 5.40mg/dl, while it was 6.19mg/dl in the ET group ($p < 0.01$). Those who were actively taking diuretics had higher UA than those not taking, in both PD & ET groups ($p < 0.01$).
- A higher percentage of ET patients took loop diuretics (35.6%) than PD patients (13.6%).

Conclusions:

- Our results showed a significantly higher UA level in the ET patient group compared to the PD group.
- A higher prevalence of gouty arthritis was found in ET patients when compared to PD patients.
- ET patients, who have higher mean UA values, had greater percentage taking loop diuretics compared to PD patients. Whether loop diuretics may be used to raise UA levels and subsequently reduce PD incidences requires further investigations.

