

Age of Onset and Diagnosis of Essential Tremor

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Objective: This study was designed to determine relationship of age of onset with age at clinical diagnosis of essential tremor (ET).

Background: ET is the most common movement disorder, with a prevalence of about 5% in the general population, rising to over 20% in the elderly. Age of onset is bimodal. Recently the International Parkinson and Movement Disorder Society tremor task force issued a consensus statement on tremor classification. Determination of accurate age of onset and rough categorization of patients was proposed based on age groups. Different clinical features, mode of progression, co-morbidities and mortality have been reported for early and late onset ET. We studied the association between age of onset and age when diagnosis of ET was established.

Methods: The Movement Disorders Clinical Case Registry (MD-CCR) is an application that works within a specific U.S. Veterans Health Administration medical center's electronic medical record (EMR) to query and export information. The MD-CCR in Houston was queried for all patients with ICD-9/10 codes of 333.1 and/or G25.0 seen in a movement disorder specialty center's outpatient clinics during the time period Sept. 1, 2001 to March 31, 2018. Each patient's EMR was reviewed to verify the diagnosis of ET and to find information on the age at onset of symptoms and age at diagnosis. Those with available information on both ages were divided into groups based on the age of onset, as per MDS Consensus Statement on the Classification of Tremors.

Results: Of 1468 patients with at least one of the codes, 1181 (80.4%) had evidence of ET in the EMR, and 1148 had information for both ages.

Figure 1: Groups based on age at onset of ET symptoms

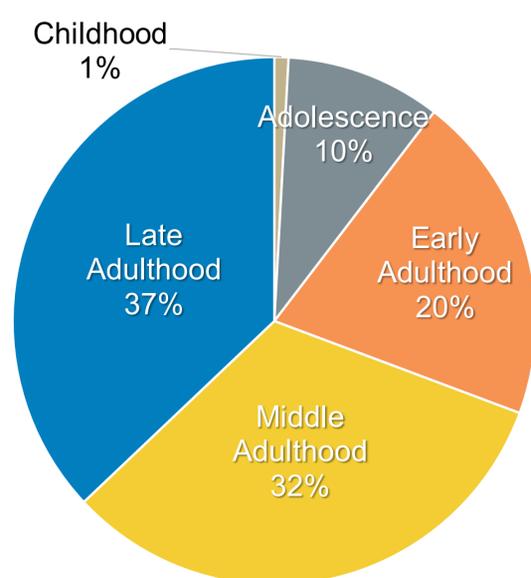
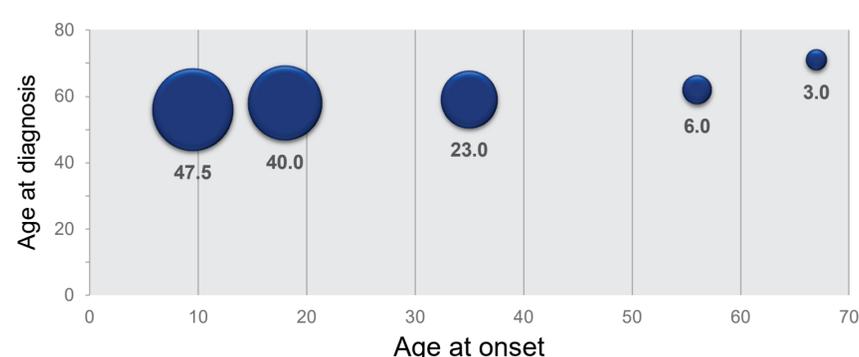


Table 1: Age at onset, diagnosis and years since diagnosis (mean ± SD and median)

Age Groups	Age Range	N	%	Age at Study	Age at Onset	Age at Diagnosis	Years since Diagnosis
All Subjects	—	1181	—	63.7 ± 11.1 63.0	51.8 ± 18.0 57.0	64.3 ± 11.1 65.0	12.5 ± 14.3 6.0
Childhood	3-12	10	0.9	61.1 ± 9.8 61.0	9.3 ± 2.3 9.5	58.7 ± 7.8 56.0	49.4 ± 8.0 47.5
Adolescence	13-20	110	9.6	59.1 ± 13.6 61.0	17.9 ± 2.2 18.0	55.6 ± 4.2 58.0	37.8 ± 14.4 40.0
Early Adulthood	21-45	232	20.2	56.6 ± 12.5 59.0	34.2 ± 7.8 35.0	56.4 ± 12.9 59.0	22.2 ± 14.7 23.0
Middle Adulthood	46-60	371	32.3	62.0 ± 7.2 61.0	55.2 ± 4.0 56.0	62.5 ± 5.9 62.0	7.3 ± 5.7 6.0
Late Adulthood	61+	425	37.0	70.4 ± 8.5 69.0	68.2 ± 5.9 67.0	72.3 ± 6.8 71.0	4.1 ± 4.0 3.0

Figure 2: Years between ET onset and diagnosis



Conclusion: Based on the age of onset, late adulthood constituted the largest group in this ET cohort and they were also diagnosed with ET within the shortest time frame as compared to other groups. This could be due to faster progression of tremor or increasing concern among patients and referring physicians for an underlying neurodegenerative disorder.

