

Cognition and Affect in Patients with Cervical Dystonia and Tremor

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Background: Isolating differential characteristics may clarify the relationship between tremor and cervical dystonia. Family history of movement disorder and psychiatric states, as well as personal characteristics of cognition, mood and tremor location may differ in patients with (idiopathic) essential tremor (ET) vs. cervical dystonia with tremor (CD/T) vs. cervical dystonia without tremor (CDnoT).

Objective: To assess family history of movement and mood disorder, and personal qualities of cognition and mood in a referral population of patients with CD/T.

Methods: 79 CD/T (87% female), mean age onset CD 47 years and mean age onset T 47 years, were similarly evaluated at mean age 59 years. Analysis included recalled age onset CD and T as well as T location; family history of psychiatric and movement disorders; scores on MMPI, Hamilton Depression and/or Spielberger Anxiety Rating Scales; neuropsychological performance on: Rey Auditory Verbal Learning Test (AVLT), Three Letter Cancellation Task (LCT), Digit Span (DS), Rey-Osterrieth Complex Figure Test (ROCFT), Conners Continuous Performance Test (CPT), Test of Variables of Attention (TOVA), Wisconsin Card Sorting Test (WCST).

Results: Family history anxiety 10 (13%), depression 17 (22%) [OCD 5, psychosis 4, alcoholism 29]; non-PD tremor 38 (48%) [head only 13, hands only 17, both head and hands 8], dystonia 13 (17%), scoliosis 11 (14%), PD 6 (8%). Personal evidence anxiety 41 (52%), depression 57 (72%) [7 also OCD]. Neuropsychological studies (age adjusted): impaired AVLT 9/72 (13%), impaired verbal memory 6/72 (8%), impaired auditory digital memory 4/41 (10%), impaired visual vigilance (LCT) 46/72 (64%), impaired visuomotor skills 1/68 (1%), impaired visual memory 11/68 (16%), impaired visual attention (TOVA/CPT) 13/14 (93%), impaired executive function (WCST) 12/21 (57%).

Conclusions: As we have shown elsewhere, like patients with ET (Vermilion, Stone, Duane, *Mov Disord*, 2001), CD/T patients have a high frequency of family history of psychiatric disorder more apt to be depression than anxiety but both are prevalent as they are in the patients themselves. Similarly, family history of tremor is prevalent in both ET and CD/T, but a greater likelihood that tremor in relatives is of the head in CD/T and of the hands more than head in ET, as it is in the affected patients themselves (Duane, et al. *Mov Disord*, 1993). In patients, psychiatric comorbidity is high in CD/T, especially with respect to depression, whether due to pain and distorted self-image or biological is unclear. Cognitive impairment is greatest in tasks requiring attention, whether secondary to distraction from the movement disorder or secondary to basal ganglion to frontal cortex dysfunction is also unclear but is similar to that observed in ET (Vermilion, Stone, Duane, *Mov Disord*, 2001).

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