RE-KINECT, a Real-World, Prospective Tardive Dyskinesia Screening Study: An Evaluation of Baseline Characteristics in Older Patients

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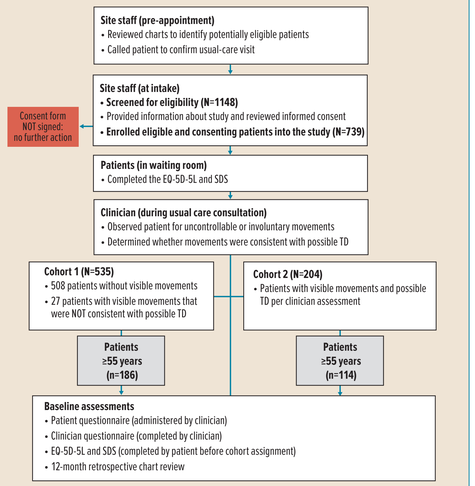
INTRODUCTION

- Tardive dyskinesia (TD) is a persistent and often irreversible movement disorder that is associated with prolonged exposure to antipsychotics and other dopamine receptor blocking agents[1-4]
- Compared to younger adults, older adults may be more susceptible to developing TD after a shorter period of antipsychotic use[5]
- RE-KINECT (NCT03062033) is a real-world, possible TD screening study of patients treated with antipsychotics
- In this descriptive analysis, baseline data from RE-KINECT were analyzed to explore the presence and impact of possible TD in older adults (≥55 years)

METHODS

- RE-KINECT included 37 outpatient psychiatry practices from across the United States
- Adults (aged ≥18 years) with ≥3 months of lifetime exposure to antipsychotic(s) and at least one clinician-confirmed psychiatric disorder who were willing and able to provide informed consent were eligible to participate
- Patients were assigned to one of two cohorts based on their clinician's assessment of visible movements, a screen for possible TD (**Figure 1**)

Figure 1. Overview of Possible TD Symptom Screen and Cohort Assignment



EQ-5D-5L, EuroQol 5-Dimension 5-Level questionnaire; SDS, Sheehan Disability Scale; TD, tardive dyskinesia.

ASSESSMENTS AND ANALYSES

- Data from patients ≥55 years in Cohort 1 (without visible movements or with movements that were not consistent with TD) and Cohort 2 (with visible movements confirmed by clinician as possible TD) were analyzed
- Assessments at baseline included:
  - Demographics and clinical characteristics (12-month retrospective chart review, clinician reported)
  - Presence, location, and severity of involuntary movements (clinician and patient reported)
  - Impact of body movements on daily activities (patient reported but administered by clinician)
  - EuroQol 5-Dimension 5-Level questionnaire (EQ-5D-5L)[6] and Sheehan Disability Scale (SDS)[7] (patient reported)
- Significance between cohorts was analyzed using Welch's t-test
- Spearman's correlations (ρ) between clinician ratings and patient ratings were conducted for location/severity of possible TD movements, total number of regions impacted by possible TD, and maximum severity in any body region

RESULTS

- Baseline characteristics of older patients (Cohort 1, n=186; Cohort 2, n=114) were generally similar between cohorts (**Table 1**)
  - However, a significantly lower percentage of older patients in Cohort 2 versus Cohort 1 were married (P=0.037) and living with a partner/spouse or family member (P=0.007)
  - In addition, a significantly higher percentage of older Cohort 2 patients were in a non-family living situation (e.g. assisted living) (P=0.020)

Table 1. Baseline Characteristics of Older Patients

	Cohort 1: without Possible TD (n=186)	Cohort 2: with Possible TD (n=114)	*P*-value
Age, mean (SD), years	62.8 (7.5)	64.3 (7.6)	0.118
Female, n (%)	123 (66.1)	65 (57.0)	0.118
Race, n (%)			
White	148 (79.6)	84 (73.7)	0.249
Black	20 (10.8)	19 (16.7)	0.159
Other/missing	18 (9.7)	11 (9.6)	0.994
Marital status, n (%)			
Single	52 (28.0)	37 (32.5)	0.415
Divorced	49 (26.3)	35 (30.7)	0.422
Married	63 (33.9)	26 (22.8)	**0.037**
Widowed or separated	22 (11.8)	16 (14.0)	0.585
Current living situation, n (%)			
Living with other (e.g., spouse)	110 (59.1)	49 (43.0)	**0.007**
Living alone	55 (29.6)	40 (35.1)	0.326
Other[a]	21 (11.3)	25 (21.9)	**0.020**
Employment status, n (%)[b]			
Disabled	88 (47.3)	56 (49.1)	0.762
Retired	44 (23.7)	31 (27.2)	0.499
Unemployed	22 (11.8)	11 (9.6)	0.552
Employed part-time	15 (8.1)	10 (8.8)	0.832
Employed full-time	12 (6.5)	5 (4.4)	0.435
Homemaker	8 (4.3)	1 (0.9)	**0.049**
Student	2 (1.1)	0	0.158
Other	3 (1.6)	0	0.083

Bolded values are statistically significant (P<0.05 for Cohort 2 vs. Cohort 1).
[a]Living with children, parents, assisted living, group home, paid caregiver, or other non-family member.
[b]Responses are not mutually exclusive.
SD, standard deviation; TD, tardive dyskinesia.

- Compared to older patients in Cohort 1, a significantly higher percentage of older Cohort 2 patients had schizophrenia or schizoaffective disorder; a significantly lower percentage had a mood or other psychiatric disorder (**Table 2**)
  - Cohort 2 older patients had a significantly longer mean lifetime exposure to antipsychotics as compared to Cohort 1
  - There was no significant difference between cohorts in terms of overall health status

Table 2. Psychiatric Disorders, Overall Health, and Antipsychotic Exposure in Older Patients

	Cohort 1: without Possible TD (n=186)	Cohort 2: with Possible TD (n=114)	*P*-value
Schizophrenia, n (%)	29 (15.6)	34 (29.8)	**0.005**
Schizoaffective disorder, n (%)	18 (9.7)	24 (21.1)	**0.011**
Schizophrenia or schizoaffective disorder, n (%)	45 (24.2)	54 (47.4)	**<0.001**
Mood or other disorder, n (%)[a]	157 (84.4)	78 (68.4)	**0.002**
Attention-deficit/hyperactivity disorder	12 (6.5)	4 (3.5)	0.240
Adjustment disorder	2 (1.1)	1 (0.9)	0.865
Anxiety disorder	36 (19.4)	26 (22.8)	0.482
Bipolar disorder	52 (28.0)	27 (23.7)	0.411
Eating disorder	2 (1.1)	0	0.158
Major depressive disorder	85 (45.7)	28 (24.6)	**<0.001**
Personality disorder	6 (3.2)	1 (0.9)	0.135
Substance use disorder	1 (0.5)	3 (2.6)	0.192
Other mood disorder	2 (1.1)	1 (0.9)	0.865
Other depressive disorder	5 (2.7)	3 (2.6)	0.977
Lifetime exposure to antipsychotics, mean (SD), years	12.2 (11.0)	19.1 (15.3)	**<0.001**
Overall health status, mean (SD)[b]	4.6 (2.6)	5.0 (2.9)	0.205

Bolded values are statistically significant (P<0.05 for Cohort 2 vs. Cohort 1).
[a]Responses are not mutually exclusive.
[b]Scale range, 0 ("no health problems") to 10 ("health as bad as you can imagine").
SD, standard deviation; TD, tardive dyskinesia.

- Compared to older patients in Cohort 1, older Cohort 2 patients had a significantly lower EQ-5D-5L utility score, indicating worse health-related quality of life (**Table 3**)
- No significant differences between older cohorts were found for SDS mean scores at baseline

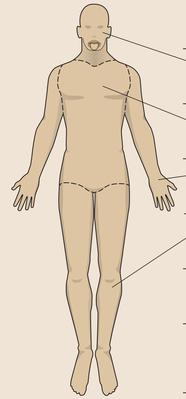
Table 3. EQ-5D-5L and SDS Scores at Baseline in Older Patients (Patient Reported)

	Cohort 1: without Possible TD		Cohort 2: with Possible TD		
Mean Score (SD)	n	Mean (SD)	n	Mean (SD)	*P*-value
EQ-5D-5L[a]					
Health VAS	183	69.7 (21.0)	114	66.1 (25.0)	0.189
Utility score	181	0.74 (0.18)	113	0.69 (0.22)	**0.022**
SDS[b]					
Work/school	112	4.3 (3.6)	51	3.7 (3.1)	0.341
Social life	185	4.1 (3.4)	114	3.9 (3.4)	0.615
Family life/home responsibilities	186	4.1 (3.2)	114	3.9 (3.2)	0.597
Total	186	12.3 (9.1)	114	11.8 (9.1)	0.608

Bolded values are statistically significant (P<0.05 for Cohort 2 vs. Cohort 1).
[a]VAS range, 0 ("worst health you can imagine") to 100 ("best health that you can imagine"); utility range, 0 (health state equivalent to death) to 1 (perfect health).
[b]Domain score range, 1 (no disruption) to 10 (extreme disruption); total score defined as the sum of domain scores.
EQ-5D-5L, EuroQol 5-Dimension 5-Level questionnaire; n, number of patients with available data; SD, standard deviation; SDS, Sheehan Disability Scale; TD, tardive dyskinesia; VAS, visual analog scale.

- Based on clinicians' observations of older Cohort 2 patients, severe uncontrollable movements (rating of "a lot") were most commonly found in the head/face (25.4%) and upper extremities (14.0%) (**Figure 2**)
  - Similar results were found based on patients' observations within the older Cohort 2 patients
  - Moderate and statistically significant correlations (ρ>0.5, P<0.05) were found between clinician and patient ratings of severity in each body region

Figure 2. Cohort 2 Location and Severity of Possible Tardive Dyskinesia Movements in Older Patients (Cohort 2)

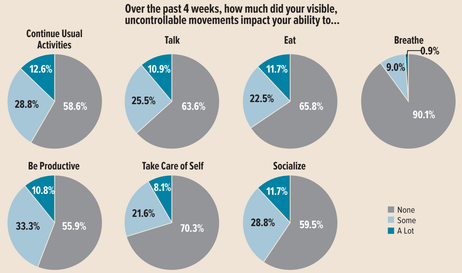


Body Region	Rating, %	Clinician Reported n=114	Patient Reported n=65[a]	Spearman's Correlation, ρ (*P*-value)
Head/face: facial muscles, lips, tongue, or jaw	None	29.8	29.2	0.53 (<0.001)
	Some	44.7	35.4	
	A lot	25.4	35.4	
Neck/trunk: neck, shoulders, chest, or hips	None	79.8	73.8	0.49 (<0.001)
	Some	15.8	20.0	
	A lot	4.4	6.2	
Upper extremities: arms, hands, or fingers	None	36.0	33.8	0.49 (<0.001)
	Some	50.0	43.1	
	A lot	14.0	23.1	
Lower extremities: legs, feet, or toes	None	61.4	58.5	0.55 (<0.001)
	Some	30.7	32.3	
	A lot	7.9	9.2	
Maximum severity score across all body regions	None	0	0	0.22 (<0.001)
	Some	61.4	50.8	
	A lot	38.6	49.2	
Total number of body regions impacted	One	42.1	35.4	0.33 (<0.001)
	Two	32.5	35.4	
	Three	15.8	18.5	
	Four	9.6	10.8	

[a]Patients with available data who indicated any visible uncontrollable movements.

- More than 40% of older Cohort 2 patients reported that their uncontrollable movements had "some" or "a lot" of impact on their ability to continue daily activities (41.4%), be productive (44.1%), and socialize (40.5%) (**Figure 3**)

Figure 3. Impact of Uncontrollable Movements on Daily Activities in Older Patients (Cohort 2, n=111*)



*Based on available data (n=111), with 1 missing assessment for ability to talk (n=110).

CONCLUSIONS

- Compared to older patients in Cohort 1 (without possible TD), older patients in Cohort 2 (with possible TD) were more likely to be unmarried, reside in assisted living, have a diagnosis of schizophrenia or schizoaffective disorder, and experience a longer lifetime exposure to antipsychotics
- Older Cohort 2 patients had a significantly worse quality of life (EQ-5D-5L utility score) than Cohort 1 patients; daily functioning (SDS score) was similarly impaired in both cohorts
- Older Cohort 2 patients reported that uncontrollable movements had an impact on usual activities, productivity, and socialization
- In older Cohort 2 patients, patient ratings of TD severity were significantly correlated to clinician ratings, suggesting that procedures outlined in this study (i.e., observing patients and questioning them about uncontrollable movements) may be useful when screening for TD and assessing changes in severity over time
- There is a continuing need for research on the psychological, social, and occupational impact of TD on quality of life, particularly in older adults, including the incremental effects of possible TD above and beyond underlying psychiatric illness

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