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UTILITY OF THE OAB SYMPTOM COMPOSITE SCORE

Hypothesis / aims of study

There is no index in urology that yields a single, quantifiable, and clinically interpretable measure of overactive bladder (OAB) symptoms, defined by International Continence Society: urgency, 24-hour voiding frequency, urge urinary incontinence (UUI). Because the combined suite of OAB symptoms must be looked at in totality in order to fully understand the patient experience under treatment, the OAB Symptom Composite Score (OAB-SCS) was developed to provide a single quantifiable value to the number and severity of OAB symptoms. The OAB-SCS accounts for the association between toilet void frequency and urgency severity/toilet void, and accounts for events of incontinence.

Study design, materials and methods

Data was pooled from two large, randomized (1:1 ratio of trospium to placebo), Phase III double-blind, placebo-controlled clinical studies studying the effects of trospium chloride on OAB patients (study period for Study 1 from November 2001-December 2002, and for Study 2 from June 2003-January 2004). Diary data were captured at baseline and on treatment at weeks 1, 4, and 12. Symptoms of urgency, average ≥ 10 toilet voids per day and average ≥ 1 UUI episode per day, were required for inclusion. Participants received either trospium chloride 20 mg bid or placebo for 12 weeks following a 3-week washout and completion of a 7-day patient urinary diary to record each toilet void with associated urgency severity, and UUI episodes per day at baseline. The 7-day patient urinary diary was also collected during the week prior to each visit. Patients recorded each time they voided or experienced an UUI episode. Every toilet void was patient-rated for urgency severity using the IUSS. An OAB-SCS total was obtained for each patient within each day during the 7-day diary collection period for every visit. IUSS scores for each toilet void were assigned a corresponding OAB-SCS point value. UUI episodes in which the patient did not make it to the toilet and thus totally voided their bladder in an incontinence episode were considered “UUI episodes not associated with a toilet void”. An example of scoring of the OAB-SCS is presented in Table 1.

Table 1: Example of OAB-SCS Total for Patient-Reported Toilet Voids and Urge Urinary Incontinence Events during a Single Day of Diary Collection

Number Toilet Void Events	Urgency Severity per Event	OAB-SCS Points per Event x Number of Events = OAB-SCS Points
3	0	1 x 3 Events=3
3	2	3 x 3 Events=9
2	3	4 x 2 Events=8
2 UUI Episodes Not Associated with a Toilet Void		5 x 2 Events=10
		OAB-SCS Total = 30

Analysis of the OAB-SCS change from baseline values was performed to assess the sensitivity of the OAB-SCS to discern treatment group differences between inactive (placebo) and active (trospium chloride) pharmacological intervention. Analysis of variance (ANOVA) models with effects for treatment and investigational center were used in the models.

Results

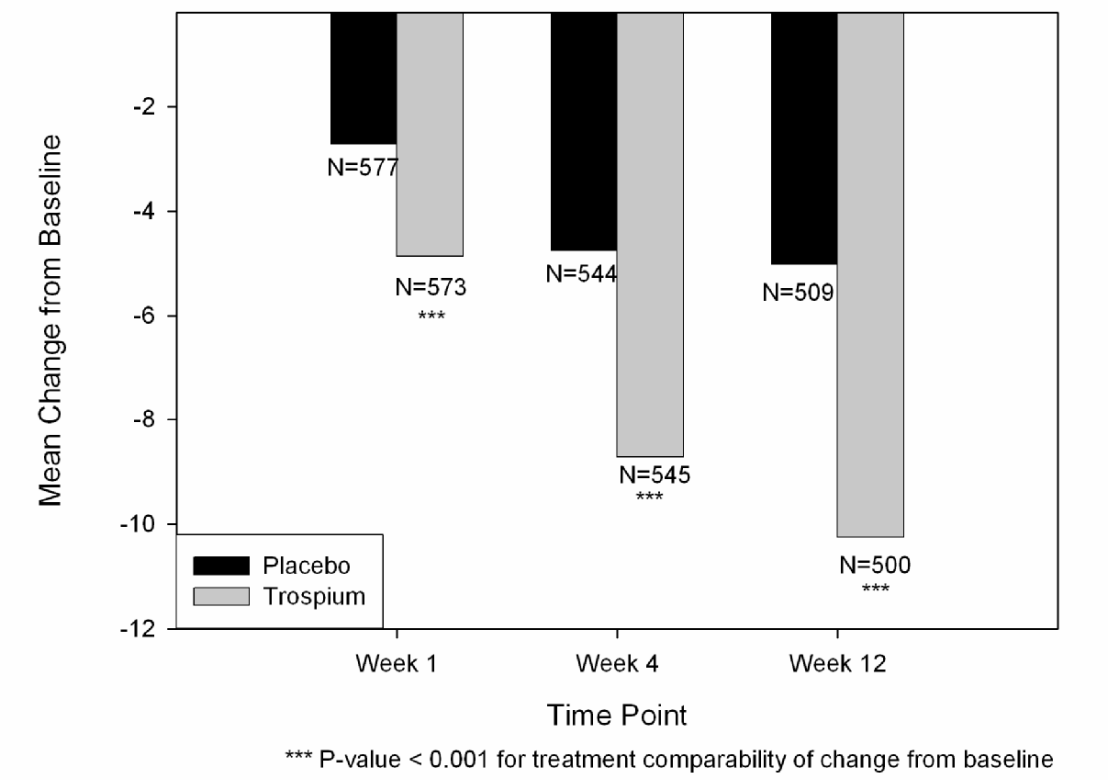
Table 2 presents the intent to treat (ITT) observed OAB-SCS least square mean (LSMean) values at baseline and each week, by treatment group.

Table 2: LSMean (SE) Values at Each Visit by Treatment (ITT Observed Cases)

	Placebo			Trospium		
	N	LSMean	SE	N	LSMean	SE
Baseline	581	36.94	0.47	576	36.17	0.47
Week 1	577	34.25	0.49	573	31.30	0.49
Week 4	544	32.27	0.51	545	27.53	0.51
Week 12	509	31.99	0.52	500	26.08	0.53

Figure 1 presents the OAB-SCS mean change from baseline values at each time point, using the ITT observed values at each time point.

Figure 1: OAB-SCS LSMean Change from Baseline by Treatment (ITT Observed Cases)



*** P-value < 0.001 for treatment comparability of change from baseline

Interpretation of results

The change in the trospium-treated group was approximately 10 OAB-SCS points (5 OAB-SCS points for the placebo-treated group), and is clinically equivalent to, for example: 1. An average daily reduction of 3 moderate severity urgency toilet voids and a single void with no urgency for each patient, or; 2. An average daily reduction of 2 severe urgency toilet voids and a single mild urgency toilet void for each patient, or; 3. An average daily reduction of 2 UUI episodes/day for each patient. Further, when trials are powered based on effiacy outcomes, use of more sensitive variable outcomes can reduce the required samples sizes, thus reducing the exposure to patients of experimental products as well as reducing the cost of the studies. The OAB-SCS was also found to be a more sensitive measure of treatment effect differences and thus may be a more sensitive variable for use in sample size determination and estimation for clinical trials studying OAB treatments.

Concluding message

The OAB-SCS is designed to provide an understandable and interpretable tool for the researcher and clinician. The OAB-SCS captures the range of symptoms observed in patients with OAB and the 3 hallmark symptoms of the disease (voids, urgency severity, and UUI) in one convenient score.

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