

## Supplementary Materials: Transconjunctival versus Transcutaneous Injection of Botulinum Toxin into the Lacrimal Gland to Reduce Lacrimal Production: a Randomized Controlled Trial

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**Table S1.** Findings of objective and subjective evaluations after the botulinum toxin BTX-A injections into the lacrimal. GBI, Glasgow Benefit Inventory. Data are *n* (%) or mean  $\pm$  standard-deviation values.

Variable	CON Group	CUT Group	<i>p</i>
TMH, mm			
2 weeks after intervention	0.22 $\pm$ 0.07	0.27 $\pm$ 0.07	
6 weeks after intervention	0.20 $\pm$ 0.08	0.24 $\pm$ 0.10	
12 weeks after intervention	0.22 $\pm$ 0.07	0.25 $\pm$ 0.09	
24 weeks after intervention	0.22 $\pm$ 0.07	0.23 $\pm$ 0.08	0.218 <sup>a</sup>
STA value, mm			
2 weeks after intervention	11.11 $\pm$ 6.62	10.44 $\pm$ 7.11	
6 weeks after intervention	9.20 $\pm$ 5.98	11.07 $\pm$ 7.59	
12 weeks after intervention	11.29 $\pm$ 5.36	11.24 $\pm$ 6.50	
24 weeks after intervention	11.44 $\pm$ 6.15	9.32 $\pm$ 5.14	0.459 <sup>a</sup>
Outdoor Munk score			
2 weeks after intervention	1.79 $\pm$ 1.17	1.44 $\pm$ 0.70	
6 weeks after intervention	1.46 $\pm$ 0.92	1.33 $\pm$ 0.62	
12 weeks after intervention	1.14 $\pm$ 1.07	1.08 $\pm$ 0.95	
24 weeks after intervention	1.25 $\pm$ 0.97	1.48 $\pm$ 1.19	0.218 <sup>a</sup>
Indoor Munk score			
2 weeks after intervention	1.14 $\pm$ 1.15	0.85 $\pm$ 0.82	
6 weeks after intervention	0.89 $\pm$ 0.92	0.59 $\pm$ 0.57	
12 weeks after intervention	0.79 $\pm$ 0.83	0.44 $\pm$ 0.51	
24 weeks after intervention	0.71 $\pm$ 0.66	0.72 $\pm$ 0.89	0.082 <sup>a</sup>
GBI score			
6 weeks after intervention	14.23 $\pm$ 21.32	13.70 $\pm$ 20.37	
12 weeks after intervention	18.58 $\pm$ 16.69	12.59 $\pm$ 12.64	

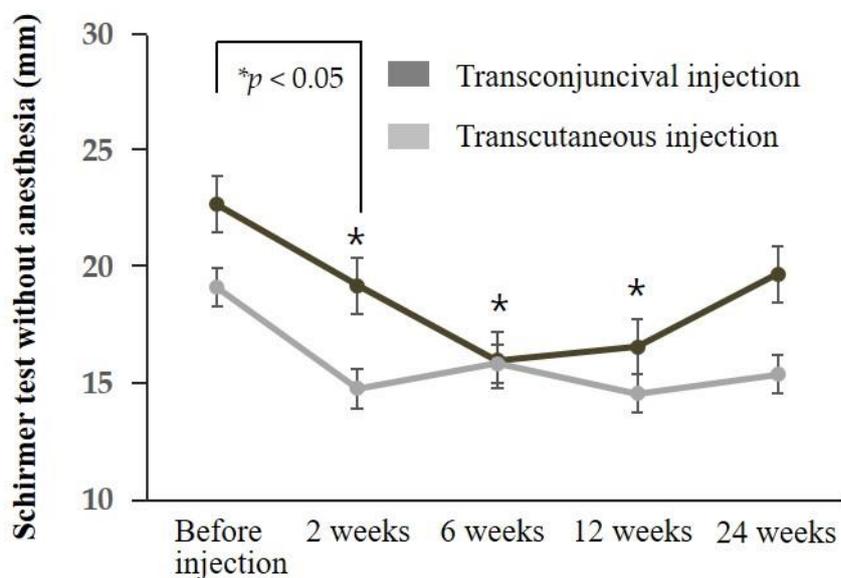
24 weeks after intervention	15.63 ± 14.80	12.96 ± 12.80	0.415 <sup>a</sup>
Duration of symptom relief, months	5.25 ± 2.42	6.07 ± 1.48	0.176 <sup>b</sup>
Adverse effect	3/28 (10.7%)	3/25 (12%)	1.000 <sup>c</sup>
Recommendation to others	21/28 (75%)	18/25 (72%)	1.000 <sup>c</sup>
Overall success	25/28 (89.3%)	21/25 (84%)	0.694 <sup>c</sup>

CON, transconjunctival injection; CUT, transcutaneous injection; <sup>a</sup> Repeated-measures analysis of variance; <sup>b</sup> Mann-Whitney *U* test; <sup>c</sup> Fisher's exact test.

**Table S2.** Change in Glasgow Benefit Inventory (GBI) of enrolled patients on a 5 point Likert scale: 1 = Much worse, 2 = A little or somewhat worse, 3 = No change, 4 = A little or somewhat better, 5 = Much better.

	Question	Score 6 Weeks	Score 12 Weeks	Score 24 Weeks	Average Score
1.	Has the result of the operation affected the things you do?	3.6 ± 0.7	3.5 ± 0.7	3.7 ± 0.6	3.57
2.	Have the results of the operation made your overall life better or worse?	3.6 ± 0.9	3.8 ± 0.7	3.6 ± 0.7	3.65
3.	Since the operation, have you felt more or less optimistic about the future?	3.6 ± 0.8	3.8 ± 0.6	3.6 ± 0.6	3.65
4.	Since your operation, do you feel more or less embarrassed when with a group of people?	3.2 ± 0.7	3.3 ± 0.7	3.1 ± 0.7	3.22
5.	Since your operation, do you have more or less self-confidence?	3.5 ± 0.8	3.4 ± 0.7	3.6 ± 0.6	3.50
6.	Since your operation, have you found it easier or harder to deal with company?	3.4 ± 0.8	3.4 ± 0.6	3.4 ± 0.6	3.41
7.	Since your operation, do you feel that you have more or less support from your friends?	3.1 ± 0.6	3.3 ± 0.5	3.3 ± 0.5	3.23
8.	Have you been to your family doctor, for any reason, more or less often, since your operation?	2.7 ± 0.5	2.9 ± 0.5	2.7 ± 0.7	2.80
9.	Since your operation, do you feel more or less confident about job opportunities?	3.1 ± 0.3	3.1 ± 0.4	3.2 ± 0.5	3.15
10.	Since your operation, do you feel more or less self-conscious?	2.8 ± 1.0	2.7 ± 0.9	2.7 ± 0.7	2.73
11.	Since your operation, are the more or fewer people who really care about you?	3.2 ± 0.7	3.2 ± 0.7	3.3 ± 0.6	3.23
12.	Since you had the operation, do you catch colds or infections more or less often?	3.5 ± 0.9	3.6 ± 1.1	3.6 ± 0.9	3.55
13.	Have you had to take more or less medicine for any reason, since your operation?	2.9 ± 0.2	3.0 ± 0.2	2.9 ± 0.6	2.94
14.	Since your operation, do you feel better or worse about yourself?	3.7 ± 0.9	3.7 ± 0.8	3.6 ± 0.7	3.63
15.	Since your operation, do you feel that you have had more or less support from your family?	3.4 ± 0.9	3.4 ± 0.6	3.4 ± 0.8	3.39
16.	Since your operation, are you more or less inconvenienced by your health problem?	3.5 ± 1.1	3.5 ± 1.0	3.5 ± 0.8	3.52
17.	Since your operation, have you been able to participate in more or fewer social activities?	3.1 ± 0.3	3.1 ± 0.4	3.1 ± 0.3	3.07
18.	Since your operation, have you been more or less inclined to withdraw from social situations?	3.1 ± 0.4	3.0 ± 0.3	3.0 ± 0.3	3.02
	Rasch scale (score, -100–100)*	14.0 ± 20.4	15.7 ± 14.8	14.3 ± 13.6	14.65

\*A final score is calculated using a Rasch scale, which ranges from -100 (maximum detriment) to 100 (maximum benefit).



**Figure S1.** Change in value of Schirmer's I test without topical anesthesia during the 24 weeks of follow-up in the CON and CUT groups. The STA value decreased significantly relative to before injections ( $p < 0.05$ ) at 2, 6, and 12 weeks. \*RMANOVA.