LONG TERM FOLLOW-UP OF PATIENTS WITH SPASMODIC DYSPHONIA

P.H. Dejonckere¹, J.P. Martens², M. Moerman³

¹ Utrecht University, Catholic University of Leuven, Federal Institute of Occupational Diseases, Brussels
² Ghent University, Computer Science
³ Utrecht University & Jan Palfijn Hospital, Ghent

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Abstract: ‘Adductor spasmodic dysphonia’ (SD) is a focal laryngeal dystonia mainly resulting in a strained voice quality with spastic voice breaks and frequency shifts, perturbing fluency and intelligibility. It is well known that SD-patients report unusually high scores on the VHI, as they experience their disease as seriously impairing their quality of life. The standard treatment is Botulinum Toxin (BT) injection in the thyroarytenoid muscles, in order to interfere with the perturbed sensory feedback loop of kinetic muscle tension regulation. The mode of action of this toxin is at cholinergic nerve terminals where it inhibits the release of acetylcholine. However, the globally favourable effects are only temporary, in part because of the formation of remodeled neuromuscular junctions after a few months, but the Botulinum injections can be repeated. There is a lack of information about long term effects.

I. MATERIALS AND METHODS

In the current study, long term evolution is analysed in 19 patients having been injected with BT between 4 and 18 times over periods of 3 to 16 years. Our approach is based on

(1) a differentiated perceptual panel rating, including conventional and dedicated parameters
(2) a computerized program for signal analysis that is suited for irregular voices, and that mainly deals with voicing and aperiodicity criteria. Material is a phonetically selected constantly voiced sentence.
(3) a patient‘ self evaluation on 2 visual analog scales: voice quality itself and social/occupational handicap.
(4) a quantification of side effects : temporary breathiness and aspiration

II. RESULTS

Moments of treatment clearly determine a saw teeth effect in most parameters, particularly those self evaluated by the patient. Over time the acoustic parameters just before a new injection become significantly less deviant, without reduction of time delay between the injections. This differs from the patient‘s self evaluations : the pre-treatment scores worsen with time, while the best scores between consecutive injections remain remarkably stable.

III. CONCLUSION

Repeated BT injections remain active even at long term, but Spasmodic Dysphonia cannot be cured with Botulinum. There seems to be an individual ceiling effect for the achievable functional result. Objective measurements demonstrate stability, even a slight improvement over time. Patient’s self evaluations worsen over time. Side effects do not grow worse.