A Double Blind Placebo Controlled Parallel Trial of Botulinum Toxin B (Myobloc™) for the Treatment of Sialorrhea in Parkinson’s Disease

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ABSTRACT

Background: Sialorrhea (drooling) is a major morbidity in several neurodegenerative diseases, including Parkinson’s disease (PD). Injections of botulinum toxin A are often an effective treatment for sialorrhea in PD. Based on the relatively higher rates of dry mouth with use of botulinum toxin B (BTX-B), there is reason to suspect that it may be equally or more effective. Objectives: To determine whether injections of BTX-B (Myobloc™), Elan Pharmaceuticals) into the parotid and submandibular glands are a safe and effective treatment for sialorrhea in patients with PD. Methods: We assessed demographics, PD treatments, head posture, the Unified Parkinson’s Disease Rating Scale (UPDRS), two questionnaires regarding drooling, visual analogue scales, global impressions, salivary gland imaging, and a dysphagia questionnaire in 16 PD subjects with problematic sialorrhea. Patients were then randomized to receive either BTX-B (1,000 into each parotid gland, and 250 into each submandibular gland), or a placebo, using only anatomical landmarks. All patients enrolled in this study reported significant drooling and only placebo groups were initially identical. Compared to placebo, those randomized to drug reported no change in the visual analogue scale (p=0.001), global impressions of change (p=0.005), or improvements on the visual analogue scale (p=0.001), and decreased gait (3), decreased gait (2), diarrhea (1) and neck pain (1) in the BTX-B group. Conclusion: Anatomically guided injections of BTX-B into the parotid and submandibular glands appear to effectively improve sialorrhea without compromising dysphagia in patients with PD.

INTRODUCTION

Sialorrhea (drooling) is a major morbidity in several neurodegenerative diseases including Parkinson’s disease (PD). Although there is relatively little attention has been given to the etiology or management of this condition, sialorrhea is experienced by the majority of PD patients and some patients consider it to be their worst problem. Any subject receiving treatment includes individuals with Parkinson’s disease, who often do not seek medical advice, those in whom the disease has been diagnosed for the first time, those with other conditions, and those who have had unsuccessful treatment. The patients should be aware of their own treatment. The study was allowed and for the treatment of sialorrhea, and for the patients who received the drug. The study was conducted by a double-blind, placebo-controlled trial of botulinum toxin B for sialorrhea. All patients were randomized in a 2:1 block to receive either botulinum toxin B or a placebo. The study was conducted by the Baylor College of Medicine Investigational Review Board. All patients were randomized to receive either botulinum toxin B or a placebo. All patients were randomized in a 2:1 block to receive botulinum toxin B or a placebo. The study was conducted by a double-blind, placebo-controlled trial of botulinum toxin B for sialorrhea. All patients were randomized in a 2:1 block to receive either botulinum toxin B or a placebo. The study was conducted by the Baylor College of Medicine Investigational Review Board.

METHODS

This was a double-blind, placebo-controlled, parallel trial of sixteen PD patients recruited from the Baylor College of Medicine Parkinson’s Disease Center and Movement Disorders Clinic. The diagnosis of PD was made using standard criteria, and all patients had previously been treated with levodopa without meaningful dysphagia. The study was approved by the Baylor College of Medicine Institutional Review Board. All patients were randomized to receive either botulinum toxin B or a placebo. All patients were randomized in a 2:1 block to receive botulinum toxin B or a placebo. The study was conducted by the Baylor College of Medicine Investigational Review Board.

RESULTS

All 16 patients (13 male, mean age of 78.4 ± 11.4 and mean PD duration of 12.3 ± 9.1 years) completed the study. (Figure 1A, Table 1) Anti-cholinergic blockers, cholinesterase inhibitors, levodopa, pramipexole, ropinirole, and selegiline were continued. The doses of all other medications were kept constant during the study. All patients received botulinum toxin B or placebo. Two patients were lost to follow-up. One patient died during the study, and was not included in the analysis. There were no significant differences in demographic or baseline characteristics between the two groups. There was no change in UPDRS sub-scores, angle of head posture, or dysphagia scale. (Table 1) Adverse events were mild and included dry mouth (3), increased gait (2), diarrhea (1) and neck pain (1) in the BTX-B group. Baseline scintigraphic scans varied tremendously, from 2,228 to 100,735 counts per minute, severely limiting statistical power. (Table 1) Overall, 8 patients had drug improved ≥25%, whereas only 1 out of 8 placebo subjects showed a similar improvement. (Figure 2) The study was not designed to determine duration of effect. Anecdotally, most subjects reported that the clinical improvement lasted between 12 and 20 weeks.

DISCUSSION

Anatomically guided injections of botulinum toxin B into the parotid and sub-mandibular glands appear to effectively improve sialorrhea without compromising swallowing in patients with PD, as determined by a double-blind, placebo-controlled trial of sixteen patients from the Baylor College of Medicine Parkinson’s Disease Center and Movement Disorders Clinic. The study was conducted by a double-blind, placebo-controlled trial of sixteen PD patients recruited from the Baylor College of Medicine Parkinson’s Disease Center and Movement Disorders Clinic. The study was conducted by a double-blind, placebo-controlled trial of sixteen PD patients recruited from the Baylor College of Medicine Parkinson’s Disease Center and Movement Disorders Clinic. The study was conducted by a double-blind, placebo-controlled trial of sixteen PD patients recruited from the Baylor College of Medicine Parkinson’s Disease Center and Movement Disorders Clinic. The study was conducted by a double-blind, placebo-controlled trial of sixteen PD patients recruited from the Baylor College of Medicine Parkinson’s Disease Center and Movement Disorders Clinic. The study was conducted by a double-blind, placebo-controlled trial of sixteen PD patients recruited from the Baylor College of Medicine Parkinson’s Disease Center and Movement Disorders Clinic. The study was conducted by a double-blind, placebo-controlled trial of sixteen PD patients recruited from the Baylor College of Medicine Parkinson’s Disease Center and Movement Disorders Clinic. The study was conducted by a double-blind, placebo-controlled trial of sixteen PD patients recruited from the Baylor College of Medicine Parkinson’s Disease Center and Movement Disorders Clinic.

REFERENCES