

A 30-Year Review of Laryngeal Dystonia Research

In the paper, “Phenomenology, Genetics and CNS Network Abnormalities in Laryngeal Dystonia: A 30-Year Experience,” published in *The Laryngoscope*, 128:S1-S9, January 2018, Drs. Andrew Blitzer, Mitchell F. Brin, Kristina Simonyan, Laurie Ozelius, and Steven J. Frucht, provided a review of over 30 years of experience and research studies involving patients with laryngeal dystonia (LD). We’ve summarized some of the highlights.

The article features what has been learned from over 25,000 botulinum toxin injections for the treatment of LD symptoms. Doctors believe that the long-term success of this treatment is related to the fact that the central nervous system never has a chance to adapt to a new normal because of the required reinjection regimen of the toxin. The effects of botulinum toxin lasts between 3-4 months, and since the symptoms of the disorder change in severity depending on factors like stress, it is important doctors adjust the dose at each visit.

With the advent of functional brain imaging over the past several years, there has been a lot learned about the areas of the brain that behave differently in LD patients as compared to controlled groups without the disorder. This work has built the foundation for the future where we may see controls and neural biomarkers of LD that can be used for accurate diagnosis.

In addition, the article reviewed the use of alcohol to reduce symptoms. In one study, over 76% of those with LD had a reduction of symptoms for 1-3 hours. They believe it is because alcohol controls the abnormal neurotransmission of GABA (an aminobutyric acid that contributes to motor control). Based on this, the same team did a study on sodium oxybate, which is said to have the same effect as ethanol. All 53 patients in the study group experienced improvement in vocal symptoms that lasted up to 3.5 hours without major side effects. It was important to note improvement occurred regardless of whether the patient had symptoms of abductor or adductor.

This research and the continued collaboration of doctors studying LD has moved the lever for better diagnosis and improvement in treating symptoms and may hopefully lead to future controls of the disorder.

As one of the pioneers of treating laryngeal dystonia with botulinum toxin, Dr. Andrew Blitzer shared some additional insights.

What are the most important things that you have learned about Botox® injections for treating symptoms of LD over the course of the last 30 years? Botox® is a treatment of symptoms until we have a better way of identifying CNS (Central Nervous System) errors and have the ability to fix them. The best treatment for the symptoms of LD is to individuate treatment of doses and timing for each patient.

How has the perception of LD changed in the 30 years that you've been doing this?

I think we now know that this is a neurologic disorder and we now have identified several different aberrant areas in the sensory-motor pathways that all produce the same symptoms.

Since the brain is so complex and it's structural alterations in brain organization that have been demonstrated in patients with LD, where will be a cure for SD? Whether we can permanently change the errors in the CNS or just be able to replace what chemicals are missing, or remove them when there is too much, or use electrical stimulators much more effectively is all uncertain at this time.

How does it feel to have had this type of impact on the lives of people with SD by pioneering the treatment of SD? Wonderful. That is why I went into medicine.

Is there a message that you, as a doctor, would like to get out to both diagnosed and even undiagnosed individuals? Be persistent and flexible while we are sorting out the pathophysiology and better management of this disorder.