Botulinum toxin improves quality of life for those with spastic lower limbs

Abobotulinumtoxin A, a type of botulinum toxin, relaxes muscles in stroke or trauma patients with spastic lower limbs. Repeat doses may increase walking speed and improve quality of life.

Kaci Durbin

January 15, 2017- Among patients with spastic lower limbs due to stroke or brain trauma, 1 injection of abobotulinumtoxin A can improve spasticity. Repeated injections of the medication may also improve daily functioning, walking speed, and overall quality of life, according to a recent study.

Jean-Michel Gracies, MD and colleagues reported their findings in the November 28, 2017 issue of *Neurology.*

Spastic paresis, a debilitating condition that can occur after a brain injury, leads to leg cramps, twitching, and spasms. Leg movements become stiff and often walking is difficult, if not impossible.

Abobotulinumtoxin A, a treatment similar to Botox, is derived from Clostridium botulinum bacteria. It is used to induce muscle relaxation for many conditions, including spastic paresis. While the medication has been shown in previous trials to decrease muscle tone, its effects on walking speed and quality of life were not previously examined. This study looked at both the effectiveness and safety profile of abobotulinumtoxin A.

Researchers first performed a study comparing abobotulinumtoxin A to a placebo. Study participants consisted of 381 individuals with spastic, weak limbs and walking impairment. Patients were randomly divided into three groups. The first received placebo (or no treatment), the second received 1,000 units of abobotulinumtoxin A, and the third received 1500 units of abobotulinumtoxin A. Next, 352 participants completed a one year follow-up trial looking at abobotulinumtoxin A alone.

After one injection of the drug, muscle relaxation was observed in all groups including the “no treatment” group. A significant improvement was seen only with the larger (1500 unit) dose of abobotulinumtoxin A, indicating perhaps only the 1500 unit dose is effective for this condition.

In the second portion of the trial, investigators looked at the long-term effects of abobotulinumtoxin toxin A. While muscle tone improvements did not change over time, improvement was seen in doctor evaluations of patient functioning and in patient walking speed. Prior to treatment, none of the study participants could walk at a sustainable speed. After a year of treatment, 16% of the participants were walking over 0.8 meters per second, a speed associated with community mobility, showing that repeat doses of abobotulinumtoxin A improved quality of life.

Side effects were higher in the patients treated with abobotulinumtoxin. Most of the adverse events were mild and included falls, leg pain, and muscle weakness.

Dr. Gracies and colleagues concluded that “repeated administration [of abobotulinumtoxin A] over a year was well-tolerated and improved walking speed and likelihood of achieving community ambulation.”

*This study was sponsored by Ipsen. The authors report no financial relationships with Ipsen or other pharmaceutical companies.*

[*Neurology.*](https://www.ncbi.nlm.nih.gov/pubmed/29093068)Published November 28, 2017.