

Botulinum toxin in the treatment of the overactive bladder

The problem

Many people suffer from urinary urgency – the sudden, almost uncontrollable urge to pass urine – which often leads to urge incontinence. This condition, also called an “irritable” or “overactive” bladder, hinders everyday activities and considerably impairs the quality of life. The reason for the affliction is often overactive bladder (detrusor) muscle, which leads to excessive pressure in the bladder, damage to the bladder wall, and backing up of urine to the kidneys. This may even have life-threatening consequences.

The solution

Various medications (antimuscarinic drugs, also called anticholinergics) that act on the nervous system supplying the bladder muscles may help. But many patients do not experience real treatment success, either because the anticholinergic is not effective or because of its troublesome side effects. Botulinum Toxin (Botox®, Dysport®), which is effective and almost free of side effects, can be used in these cases.

The history of botulinum toxin in medicine

Botulinum toxin is a protein that is produced by an anaerobic (= living without oxygen) bacterium, *Clostridium botulinum*. The effect of *Clostridium botulinum* bacteria on the nervous system was first described in the 18th century, when it was realised that the consumption of contaminated canned food or sausages could lead to paralysis. It was not long before doctors started thinking about how these effects could be used therapeutically. Today, botulinum toxin is being used successfully in various branches of medicine. In neurology, it helps to reduce the tension in chronic spastic muscles. Cosmetic and aesthetic surgeons use the same effects to smooth out wrinkles on the face. GPs use botulinum toxin to prevent excessive and troublesome sweating.

Botulinum toxin in neurology

When working at the Spinal Cord Injury Centre back in 1977, Prof. Brigitte Schurch had the idea of using botulinum toxin to treat overactive bladder muscle in people with paraplegia. This treatment was carried out for the first time on humans in the Spinal Cord Injury Centre at Balgrist Hospital, on 04.11.1998. It was a resounding success. The first results of treatment were presented at a congress in Denver, Colorado, USA, in 1999 and published in medical journals, the New England Journal of Medicine and Journal of Urology, in 2000.

Treatment

Using a fine needle, botulinum toxin is injected into the muscles of the bladder wall at several sites or, rarely, also into the bladder sphincter muscle. This relaxes the muscle. The injection can be done as an outpatient procedure, takes about 20 minutes, and is virtually pain-free under local anaesthetic.

The effects of treatment are usually seen within 1-2 weeks and, for many patients, mean the return to a symptom-free everyday life. The effects of botulinum toxin on bladder muscle usually last for 8-12 months.