

NEUROTOXINS IN NEUROUROLOGY – WHERE TO GO?

Aims of Study

The medical use of neurotoxins (Resiniferatoxin [RTX], Botulinumtoxin [BTX]) offers a new approach in the treatment of pelvic organ dysfunction.

The intravesical instillation of RTX, the injection of BTX into the detrusor muscle or into the striated sphincter muscles are options for the treatment of detrusor hyperreflexia/ -activity, chronic urinary retention and chronic pelvic pain states.

We report on 25 patients who underwent a neurotoxin treatment for different pelvic disorders.

Methods

After a careful neuro-urological diagnostic work-up and several standard treatment approaches (medication, electrostimulation) without sufficient clinical benefit twenty five patients were considered for a treatment attempt with RTX or BTX. Based on the diagnostic evaluation the following treatment groups resulted:

1. Detrusorhyperreflexia/ -hyperactivity (N = 11)
 intravesical instillation of RTX (10^{-7} mol)
2. Detrusorhyperreflexia/ -hyperactivity (N = 3 [RTX-non-responder])
 transurethral injection of BTX into the detrusor muscle (100 – 300
 IU Botox)
3. Chronic urinary retention (N = 8)
 perisphincteric injection of BTX (50 – 200 IU Botox)
4. Chronic pelvic pain (N = 6)
 perisphincteric injection of BTX (50 – 200 IU Botox)

Follow-up evaluations were done after one, four and twelve weeks.

Results

All procedures were completed without severe side-effects. Follow-up visits showed the following treatment results:

Group 1: 5 patients experienced improvement of symptoms and an increase of the functional bladder volume. Minor side effects were bladder irritation for 6 to 48 hours.

Group 2: Two of the three RTX-non-responder received symptomatic benefit from the BTX-injection. Minor side effects were mild hematuria for 12 to 24 hours.

Group 3: Only two of eight patients with chronic urinary retention had a medical benefit from the BTX-injection and were able to urinate again.

Group 4: Three of six pelvic pain patients had a significant reduction of pain, measured on the visual analogue scale.

Conclusions

The overall success rate is around 43 %. This seems not very high however, based on a negative patient selection the introduction of RTX and BTX as therapeutic tool into neuro-urology offers an alternative treatment approach for those who does not benefit from standard treatment modalities.

Furthermore the main advantages of the neurotoxin treatment are the avoidance of invasive surgical procedures, the reversibility of the effect, a low local and no systemic side effect profile.

We recommend the use of RTX and BTX after failing of standard treatment procedures. Further studies are required.