

SUCCESSIVE INJECTIONS OF BOTULINUM A TOXINE (BOTOX®) IN PAEDIATRIC POPULATION.

Hypothesis / aims of study

Botulinum toxin (Botox®) is a new treatment modality in management of overactive bladder syndrome. Usually, the product is used once anticholinergic drugs are no longer capable to control symptoms, or if side effects of anticholinergic drugs are not tolerated by the patient.

Since overactive bladder syndrome often occurs in paediatric population suffering from nocturnal enuresis and/or diurnal incontinence, interest in the application of the drug in this patient population occurred very soon.

Little information is available about effects of successive injections of botulinum toxin.

Study design, materials and methods

We performed a retrospective analysis of botulinum toxin treatment in a paediatric population suffering from both Diurnal and Nocturnal Incontinence in our university setting in the period between may 2003 and november 2004.

The dose of Botox® used in our patient population ranges between 50U to 300 U. At present, we use 100U as standard dose in the paediatric population.

We especially focused on effects of Botox® injection on bladder capacity, symptom control, subsequent need for anticholinergics and duration of the effects after 1st, 2nd and 3rd session.

Results

In the period between May 2003 and June 2004, 15 patients (8 female / 7 male) were treated in our institution with Botox® injection for combined diurnal and nocturnal incontinence.

First Injection:

15 patients injected

The age of first injection ranges between 8 and 13 year (average 10.9 year).

The indication for the first Botox® injection was insufficient effect of anticholinergic therapy.

Dose: 3 patients injected with 50 U; 12 patients injected with 100 U.

Bladder capacity: after 1st injection, bladder capacity increased with an average of 102 ml additional capacity compared to preoperative state (average increase of 61%).

4 patients (26.6%) still needed additional anticholinergic treatment post injection.

Second injection:

10 patients (66.7%) needed a second injection during follow-up period (5 patients because of end of therapeutic effect; 5 patients because of insufficient therapeutic effect).

Time between 1st and 2nd injection is 7 months in average (Range between 1 – 12 months).

Dose : 1 patient 50 U; 8 patients 100 U; 1 patient 300 U.

Bladder capacity : after 2nd injection, average bladder capacity in this subpopulation increased with 8% compared to capacity after 1st injection (average increase of 20 ml).

2 patients (20%) still needed additional anticholinergic treatment post injection.

Third injection:

3 patients (20%) needed a third injection during follow-up period (may 2003-november 2004).

All of them needed reintervention because of end of therapeutic effects.

All patient gained satisfactory symptom controle after 3rd session.

Definitive duration of 3rd injection episode is not clear yet.

At present no postoperative complications occurred in this paediatric population.

Interpretation of results

After 18 months of follow-up :

- 33% of patients were treated with one single instillation and persisted to have symptom control.
- 47% needed a second session to achieve and sustain symptom control.
- 20% needed an additional 3rd session to achieve and sustain satisfactory symptom control.

After 1st session, some patients do not reach a satisfactory level of symptom control and require additional anticholinergic therapy and eventually multiple sessions to achieve symptom control.

As time progresses, multiple sessions seem to be necessary to sustain symptom control.

Concluding message

Botox® therapy today is a promising technique in treatment of therapy resistant urinary incontinence in paediatric population.

Patients should be informed about necessity of multiple interventions to achieve and sustain symptom control in some cases. Consecutive injections of botulinum toxin can be safely performed with good clinical results.

Further data collection on duration of therapeutic effects and symptom control during multi session treatment of Botox® is mandatory.