669

Hascoet J[1], Forin V[2], Baron M[3], Capon G[4], Bouali O[4], Peycelon M[5], Fremond B[1], Manunta A[1], Liard A[3], Karsenty G[6], Gamé X[7], Peyronnet B[1]

1. *Chu Rennes,* ***2.*** *APHP Trousseau,* ***3.*** *Chu Rouen,* ***4.*** *Chu Bordeaux,* ***5.*** *APHP Robert Debré,* ***6.*** *APHM La Conception,* ***7.*** *Chu Toulouse*

INTRA DETRUSOR INJECTIONS OF BOTULINUM TOXIN TYPE A IN CHILDREN WITH SPINA BIFIDA: A MULTICENTRIC STUDY

Hypothesis / aims of study

Spina bifida is the first congenital cause of neurogenic bladder. Intradetrusor injections of botulinum toxin type A (IDBTX-A) have become the gold standard in adults for treatment of neurogenic detrusor over activity resistant to anticholinergics. However, there are few data about BTX-A injections in pediatric patients with spinal dysraphism. The purpose of this study was to assess the effectiveness of IDBTX-A in children with spina bifida.

Study design, materials and methods

All patients under 16 years who underwent IDBTX-A between 2002 and 2016 in 14 french centers were included in a retrospective study. The primary endpoint was the success of the injection subjectively defined as both clinical and urodynamic improvement (dryness between clean intermittent catheterizations (CICs), resolution of detrusor overactivity, bladder compliance> 20 ml/cmH2O) 6 to 8 weeks after injections. Predictive factors of success were assessed through univariate analysis.

Results

Fifty three patients with a mean age of 8.5 years were included in this study with a total of 133 IDBTX-A performed. The global success rate of the first injection (clinical and urodynamic) was 30% without significant difference according to the type of urodynamic disordes ($p = 0.96$) or to gender ($p = 0.12$). Patients with closed spinal dysraphism had a significantly better success rate than patients with myelomeningocele ($p = 0.002$). The clinical success rate was 66% without significant difference according to the type of urodynamic disorders ($p= 0.54$), to gender ($p = 0.76$) or to the type of dysraphism ($p = 0.91$). In urodynamics, IDBTX-A allowed significant improvement of compliance and maximal bladder capacity ($p = 0.01$ and $p < 0.0001$) with a trend towards improvement of maximum detrusor pressure ($p=0.09$). Patients with low compliance bladder without detrusor overactivity had no urodynamic improvement. 33 patients (62%) had a second injection and the median interval between the first two injections was 9 months.

Interpretation of results

IDBTX-A is an effective treatment in children with spina bifida, especially in case of closed spinal dysraphism. IBTX-A enable clinical improvement in most patients but urodynamic improvement was achieved less often particulary in patients with isolated low compliance bladder.

Concluding message :

IDBTX-A is an effective conservative treatment in children spina bifida which should be considered before undertaking more invasive treatments such as enterocystoplasty.

Disclosures

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