

## TREATMENT OF NEUROGENIC DETRUSOR OVERACTIVITY (NDO) BY COMBINED LOW DOSED ANTIMUSCARINICS: FOUR YEARS EXPERIENCE

### Hypothesis / aims of study

Primary aim in treatment of neurogenic lower urinary tract dysfunctions after spinal cord injury (SCI) is bladder emptying by intermittent catheterization (IC) avoiding bladder overdistension and treatment of neurogenic detrusor overactivity (NDO) to achieve a low pressure reservoir to protect upper urinary tract and bladder anatomy.

Anticholinergic agents are recommended as first line treatment .

We report long term follow up in our experience in use combined low dosed antimuscarinics in NDO refractory to high dosage of a single drug.

### Study design, materials and methods

Starting from September 2007 we introduced a protocol of treatment with antimuscarinics in patients with NDO with insufficient treatment outcome under monotherapy at high doses of oxybutynin (15 mg.a day) and trospium chloride (60 mg. a day) with introduction of a combined antimuscarinics treatment with the same drugs at low dosage.

All patients demonstrated NDO at bladder diary and urodynamic and started with oxybutynin 7.5 mg.(2.5 mg. every 8 hours) and trospium chloride 40 mg. (20 mg. every 12 hours)

Bladder diary was used as continuous control urodynamic was repeated at 3 and 6 months.

85 pts. were enrolled after sub-optimal results with monotherapy

All patients had a NDO due to upper motor neurolesion: All patients used IC 4-6 times a day avoiding overdistension.

### Results

56 patients continue in the use of combined antimuscarinic treatment maintaining a significant decrease of incontinence from an average of 4 to 1 event per day. Mean bladder capacity at bladder diary increased with combined treatment of 160 ml. from the value with monotherapy. In this population 13 patients stopped temporary reinjection of botulinum toxin in detrusor muscle and they don't require different treatment for NDO and are satisfied. No subjective increase of side effects related on antimuscarinics were noted.

29 patients stopped the treatment due to suboptimal results an were treated with second line options.

### Interpretation of results

Looking at literature, other options of approach in NDO with antimuscarinics, in front at sub-optimal results, are reported: two main studies reported a doubling of the recommended dosage of a single drug (1) and a subsequent experience in combined high dosage (2).

In our experience we tried to start with a combined treatment but using a low dosage.

Our results are encouraging especially in a group of patients with a short time after SCI before to decide further treatment by botulinum toxin injection or neurostimulation. A combined treatment is actually proposed as an option before to decide second line treatments. Different combinations with different antimuscarinics drugs could be evaluated in the future.

### Concluding message

A combination of antimuscarinic agents at low dosage is an effective treatment strategy in patients who have failed with high dosage monotherapy.

### References

- 1 – M.Horstmann e coll. Neurogenic bladder treatment by doubling the recommended antimuscarinic dosage *Neurorol Urodyn* 25; 2006:441-445
- 2 – B. Amend e coll. Effective treatment of neurogenic detrusor dysfunction by combined high dosed antimuscarinics without increase side effects *Eur. Urol.* 53; 2008: 1021-1028

### Disclosures

**Funding:** noone **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** observation of results in approved treatments **Helsinki:** Yes **Informed Consent:** No