

Oral presentation

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## Efficacy and safety of propiverine in comparison to oxybutynin in children with neurogenic detrusor overactivity: an observational study

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from 49th Annual Meeting of the Society for Research into Hydrocephalus and Spina Bifida Barcelona, Spain, 29 June – 2 July 2005

Published: 30 December 2005

Cerebrospinal Fluid Research 2005, 2(Suppl 1):S27 doi:10.1186/1743-8454-2-S1-S27

### Background

Assessment of efficacy and safety of propiverine (prop.; Mictonetten™) and oxybutynin (oxy.) in children with neurogenic detrusor overactivity (NDO) aged 1 – 18 years.

### Materials and methods

In a comparative cohort study 255 children with NDO (199 myelomeningocele (MMC), 46 spinal cord injury), were treated with anticholinergics for 2.5 years on average at 14 centers and were evaluated retrospectively. 127/255 children were allocated to prop., 128/255 to oxy.; median age at diagnosis and treatment initiation were 2.08 and 7.18 (prop.) vs. 3.37 and 7.98 (oxy) years, respectively.

### Results

Primary efficacy outcome, max. detrusor pressure at micturition, was on average reduced to a significantly larger extent in the prop. than in the oxy. group. Correspondingly, clinically relevant reductions of detrusor pressure (below 40 cm H<sub>2</sub>O or reduction by > 50%) resulted significantly more often in the prop. than in the oxy. group (74% vs. 50%). Urodynamic results are in agreement with clinical findings (tab. 1).

Both propiverine and oxybutynin demonstrated a resolution or downgrading of vesico-uretero-renal reflux (tab. 2).

**Table 1: Efficacy**

	Prop. pre	Prop. post	Oxy. pre	Oxy. post
Max. detrusor pressure at micturition (cm H <sub>2</sub> O)	59.81	36.74	65.16	54.95
Compliance (ml/cm H <sub>2</sub> O)	18.94	27.56	9.99	15.64
Max. bladder capacity (ml)	145.93	242.28	221.82	309.97
Continence (%)	7.69	31.62	20.80	50.41
Catheterization frequency/24 h	2.52	1.87	2.46	2.87

**Table 2: Reflux**

	Prop. pre	Prop. post	Oxy. pre	Oxy. post
Reflux left side (stage III–V) (N)	14	5	13	5
Reflux right side (stage III–V) (N)	12	4	13	4

Propiverine was better tolerated than oxybutynin (9.40 vs. 17.46% adverse events), in those children suffering from MMC significantly better.

**Conclusion**

Comparative studies of efficacy and tolerability of anti-cholinergics in NDO of children were missing so far. This cohort study demonstrates a more effective reduction of the max. detrusor pressure at micturition with prop. in comparison to oxy. Prop. was better tolerated than oxy. Urodynamic effects are correlated with improvement of reflux, indicating possibly more favourable long-term outcomes of the upper urinary tract

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