

Lower urinary tract dysfunction in pediatric patients with Multiple Sclerosis.

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Background and AIM

- Incidence Pediatric Multiple Sclerosis : **0.13-0.66 / 100.000 symptoms**
- *Symptoms : headache, neurological, motor and sensitive, deambulation, etc*
- **urological:** 10% at diagnosis 80% after 10yrs
- Scant data about urological symptoms in MS in pediatric, described in 1-39% cases

AIM : to present our experience in diagnosis and management of LUTS in Pediatric MS

MATERIAL AND METHODS

- **Study:** retrospective observational

• **Time:** january 2019 – january 2024

Inclusion criteria:

- MS diagnosis
- LUTS
- age at diagnosis < 18 yrs

Data

- age and gender
- first symptoms
- MRI lesions
- timing first LUTS
- LUTS: classification, management

Pediatric MS can be satisfied by any of the following: KRUPP CRITERIA

Two or more non-encephalopathic clinical CNS events with presumed inflammatory cause, separated by more than 30 days and involving more than one area of CNS

One non-encephalopathic episode typical of MS, associated with MR findings that are consistent with 2010 Revised McDonald criteria for DIS, in which follow-up MR shows at least one new enhancing or non-enhancing lesion consistent with the MS dissemination in time (DIT) criteria

One ADEM attack followed by a non-encephalopathic clinical event, three or more months after symptoms onset, which is associated with new MR lesions that fulfill the 2010 Revised McDonald DIS criteria

A first, single, acute event that does not meet the ADEM criteria and whose MR findings are consistent with the 2010 Revised McDonald criteria for DIS and DIT (applies only to children ≥12 years old)

Dissemination in Space

≥1 T2 lesions in ≥2 of the following areas:

- Periventricular
- Juxtacortical
- Infratentorial
- Spinal cord

Dissemination in Time

Simultaneous presence of gadolinium-enhancing and non-enhancing lesions on MR at any time

Or

≥1 new T2 and/or gadolinium-enhancing lesion on a follow-up MR, irrespective of its timing with reference to a baseline scan

Results

81 pts MS

6 pts with LUTS

Incidence 7.4%

- 4 Male
- 2 Female
- Age mean: 14.5 yrs

Results and interpretation

Pt	Sex	LUTS Onset	LUTS Type	UD Exam
1	F	At MS diagnosis	Urge incontinence + enuresis	OAB, reduced BC high pressure
2	F	6 mos after	Urinary retention	Dyssynergy and high PVR
3	M	At MS diagnosis	Incontinence	Acontractile bladder and low capacity
4	F	3 yrs after	Incontinence	Not invasive UD: interrupted flow + high PVR
5	F	8 mos after	Incontinence	Scheduled
6	M	5 yrs after	Urge incontinence	Not invasive UD: interrupted flow + high PVR

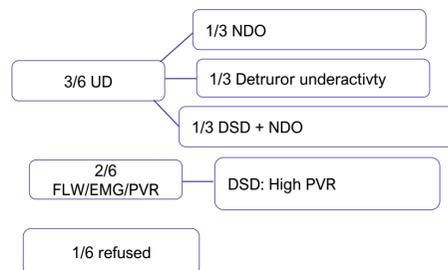
Timing

- 2/6 LUTS at diagnosis
- 4/6 Luts after 6-60 months

Main symptoms

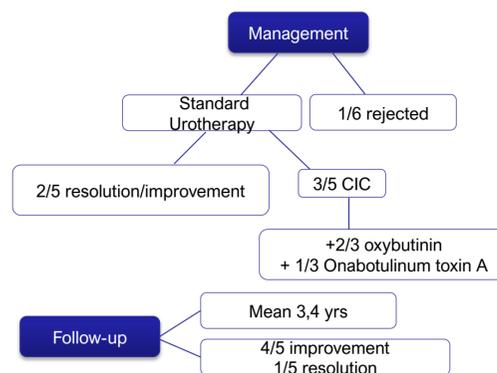
- 5/6 urinary incontinence
- 1/6 urinary retention

Uroynamics



Pt	Sex	Urological Therapy	Urological FU
1	F	Standard urotherapy; BTX-A Injections	CIC + oxybutynin + BFB; 2.4 yrs; improvement
2	F	Standard urotherapy;	CIC 3.7 yrs; improvement
3	M	Standard urotherapy; BTX-A	CIC + oxybutynin; 5.2 yrs; improvement
4	F	Not performed	Lost at FU
5	F	Standard urotherapy	Recent referral
6	M	Standard urotherapy	2.4 yrs; resolution

→ No correlation between LUTS and MRI MS lesions



Conclusions

- **An early urological evaluation is mandatory at diagnosis of MS in pediatric patients: a later evaluation increase concerns in management either from psychological point of view.**
- MS is a rare disease in pediatric patients, but must be always considered when LUTS are associated to other neurological symptoms

References

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2. A. Waldman et al., "Pediatric multiple sclerosis: Clinical features and outcome.," *Neurology*, vol. 87, no. 9 Suppl 2,S74,2015