

## Stepwise treatment for overactive bladder is prudent

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See related article on page S74.

Overactive bladder (OAB) is a significant problem in children, as presented in this review by Ramsay and Bolduc. The prevalence of OAB is arguably underreported. The impact of OAB on the quality of life (QOL) cannot be ignored. Self-esteem, anxiety, and psychological distress are the primary indices of QOL impact and affect both the child and the caregiver or parents. Additionally, there is an economic impact beyond the direct cost of medical treatment for OAB that includes the burden to change wet clothes, costs of diapers or pads, costs of excess laundry, and costs of time and travel involved with medical care that removes the child from school and the caregiver from work.

OAB is prevalent in both neurogenic- and non-neurogenic-type bladders and the treatments are similar, but there are some differences in the goals of medical therapy. The aim of medical therapy for OAB in both bladder types is to improve continence, but for neurogenic bladder, medical therapy is also aimed toward lowering detrusor storage pressures to an acceptably safe level in order to protect the upper urinary tract and prolong the time interval for clean intermittent catheterization (CIC).

It is important to note that there is a heterogeneous population with lower urinary tract (LUT) dysfunction and bladder and bowel dysfunction (BBD) that exhibit OAB. As highlighted, the impact of bowel dysfunction cannot be overlooked and is a significant comorbidity with LUT dysfunction. The key determination for OAB-directed treatment is the identification of the clinical and functional aspects of the bladder from the history, physical exam, and non-invasive urodynamics. For a small OAB with complete emptying, antimuscarinic and timed voiding/behavioural treatments/education (standard urotherapy) are warranted and have excellent efficacy. For OAB with significant incomplete bladder emptying<sup>1</sup> and history of urinary tract infections, anti-

muscarinics are not as successful and standard urotherapy with possible biofeedback and/or neuromodulation (e.g., transcutaneous electrical nerve stimulation [TENS] unit) are warranted before giving an antimuscarinic that will potentially further impair bladder emptying.<sup>2</sup> If OAB is still present after establishing complete emptying, then medical therapy will be more efficacious. This is analogous to converting a child with non-mono-symptomatic nocturnal enuresis to mono-symptomatic nocturnal enuresis (MSNE) before starting therapy aimed at MSNE.

As outlined in this review, stepwise medical treatment for OAB is prudent and aimed at either competitively antagonizing the binding of acetylcholine to the muscarinic receptors (antimuscarinics), agonizing or stimulating the beta-3 adrenergic receptors (mirabegron), or blocking the release of acetylcholine at the bladder neuromuscular junction (botulinum toxin). Other measures, which include forms of neuromodulation, should be considered thereafter. Finally, in patients with neurogenic bladder and an end-staged bladder with bladder wall fibrosis and poor detrusor compliance, medical therapy is unlikely to be effective and treatment involving surgical reconstruction is warranted.

**Competing interests:** Dr. Austin has been a clinical investigator for Allergan.

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### References

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