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Overactive bladder in the pediatric population

Overactive bladder (OAB) is a highly prevalent disorder in the pediatric population. This condition is especially troublesome for pediatric patients and their families when associated with incontinence since it negatively affects self-esteem and impairs children's development. A stepwise approach is favored to treat this pathology, starting with behavioral therapy, followed by medical management, and eventually more invasive procedures. Antimuscarinic agents are the mainstay of medical treatment for OAB. Oxybutynin is the most commonly used antimuscarinic in the pediatric population. However, some patients have a suboptimal response to antimuscarinics and many experience bothersome side effects. Although there have been reports about the use of tolterodine, fesoterodine, trospium, propiverine and solifenacin in children, to date, only oxybutynin has been officially approved for pediatric in most countries. However, patients with severe OAB symptoms does not respond adequately to oxybutynin. After failure with a first pharmacologic molecule, most practitioners will try a more specific anticholinergic. We have already studied various options to treat children with non-neurogenic refractory OAB, namely trying a different antimuscarinic (tolterodine, fesoterodine, or solifenacin) as well as combining two different anticholinergics. Despite favorable results with these options, they remain unapproved for pediatric use and other therapeutic avenues are therefore worth investigating. Mirabegron, a new molecule with a distinct mechanism of action (β3-adrenoreceptor agonist), has recently been approved as monotherapy for idiopathic OAB in adults, but it has not been studied in the pediatric population. We recently concluded on two open-label studies to explore its efficacy and safety in children. It appears as a safe and effective alternative for children with idiopathic OAB refractory to antimuscarinics, in monotherapy or in association with antimuscarinics (add-on dual therapy). The different therapeutic alternatives reported could be included in a management algorithm for intractable OAB symptoms in children, but the need for prospective randomized controlled studies prior to official approbation is to be acknowledged.

Biography

Stephane Bolduc has completed his Urology Residency at Universite Laval and completed a fellowship in Pediatric Urology at The Hospital for Sick Children in Toronto. He is Chief of Pediatric Urology and the Director of Regenerative Medicine of CHU de Quebec Research Center. He has published more than 70 papers in reputed journals and has been serving as Section Editor of Pediatric Urology of *Canadian Urological Association Journal* (CUAJ).

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