

## The kids are alright

As for other medical specialties, paediatric urology has always been one step behind adult urology. Ethical issues regarding patient consent mean that novel treatments and interventions are generally tested in adults first, before being considered in children. Randomized controlled trials (RCTs)—which are fundamental to the progression of clinical research and practice—are particularly problematic in paediatric populations. One study found that only 0.4–0.9% of the paediatric urology literature in the MEDLINE and EMBASE databases related to RCTs—accounting for just 77 trials in total (Welk, B. *et al. J. Urol.* 176, 306–310 [2006]).

Thankfully, recent developments in the field have narrowed the gap between adult and paediatric urology. Following high success rates in adults, the use of minimally invasive surgery has increased dramatically in children over the past decade. For example, although the annual paediatric nephrectomy rate remained stable from 1998–2010 in the USA, the use of minimally invasive techniques increased from 1.1–11.6% (Sammon, J. *et al. J. Urol.* doi:10.1016/j.juro.2013.09.063).

Robotic surgery has been heralded as the future of minimally invasive surgery, with key advantages over conventional laparoscopic surgery. In this issue, Hiep Nguyen and Luís Sávio discuss the use of robot-assisted laparoscopic surgery (RALS) for various common paediatric urological problems, identifying unique challenges associated with performing RALS in children and offering ‘tips and tricks’ for addressing them. By maximizing the working space, carefully monitoring urine output, following anaesthetic recommendations, and minimizing infection risk, the authors believe that RALS can be performed safely in children of all ages and sizes.

Another driver of progression in the field of paediatric urology has been the rapid and comprehensive uptake of clinical guidelines, such as the 2011 American Academy of Pediatrics guidelines for the management of first febrile UTI. In their News & Views article for this issue, Ian Hewitt and Giovanni Montini explain how adherence to these guidelines has resulted in a dramatic reduction in the number of voiding cystourethrograms (VCUGs), with their concomitant radiation and cost burden, without reducing the detection of high-grade reflux.

The publication of these, and other, guidelines has led to renewed interest in the basic cause of paediatric UTI. In a recent interview, Craig Peters, Professor of Urology and Pediatrics at George Washington University, said that it is bladder dysfunction, rather than reflux, that causes UTI, stating that the characterization of bladder and bowel dysfunction (BBD) is currently one of his “top three important research topics”. Here, Jack Elder and Mireya Diaz discuss the association between BBD and reflux, and consider primary assessment tools, diagnostic criteria, and individualized treatment approaches for BBD, including biofeedback, pelvic floor muscle retraining with interactive video games, bowel management, and the selective use of anticholinergics and  $\alpha$ -blockers.

Unfortunately, current guidelines do not cover all paediatric urological conditions. No universal guidelines exist for the management of mild to moderate antenatal hydronephrosis, but in their absence, Matthew Timberlake and Anthony Herndon encourage clinicians to use their own approach to postnatal risk stratification and management. Their recommendations regarding ultrasonography, prophylactic antibiotics, VCUG, and renal scintigraphy are presented in this issue in an easy-to-use schematic diagram.

Given the notorious difficulties with RCT recruitment in children, it is worth noting that this issue also includes a commentary on the first reported RCT of fetal shunting for lower urinary tract obstruction. Although a promising development, authors Douglass Clayton and John Brock 3<sup>rd</sup> conclude that “for the foreseeable future at least, it is unlikely that definitive answers will be realized through randomized trials”. In the absence of RCTs, small series of novel interventions and approaches—such as incontinent ileovesicostomy for neurogenic bladder, which is discussed by John Stoffel in this issue—are of utmost importance. Provided the field continues to evolve and develop as it has done in recent years, the future looks bright for paediatric urology.

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**Competing interests**  
The author declares no competing interests.