



Bladder & Bowel UK

Supporting people with bladder and bowel problems

part of Disabled Living

Paediatric Enuresis Excellence Group

PEE

Promoting quality in continence care

Enuresis Update Summer Edition 2021



**Bladder & Bowel UK, Disabled Living, Burrows House, 10 Priestley Road,
Wardley Industrial Estate, Worsley, Manchester, M28 2LY**

How Our Enuresis Update Helps You

Enuresis Update is a resource for clinicians who support children, young people and families who are affected by bedwetting. It aims to promote excellence in practice by providing information about recently published research and the implications for practice.

In this edition, we have included a paper from Aarhus on the efficacy and safety of multi-modal treatment for children who are resistant to monotherapy, which adds to the limited evidence base on combining medication; a review about the impact of combining Desmopressin with anticholinergic medication; a new standardisation document from the International Children's Continence Society that defines urotherapy and provides indicators for its use; and a study from China that suggests delaying toilet training past 21 months may increase the prevalence of night time wetting at five years old.

We hope that you find these reviews interesting and relevant to your practice. However, as ever we welcome comments, suggestions and ideas about this edition and about what you would like to see included in future editions.

We know that the impact of the pandemic continues to be felt across the UK and in front-line services. For many waiting lists have increased and ways of working have necessarily changed. We look forward to the culmination of Dr Nikki Cotterill's study that aims to map children and adult continence services across England and to investigate the positive and negative impact of Covid-19 on these services. We hope to provide information about the outcome of this study in our next edition.

If you have any thoughts or comments about this, or any other aspect of delivering care to children with enuresis, please do get in touch with us:

**Email: bbuk@disabledliving.co.uk
Tel: 0161 214 4591**

Research Reviews

1. Efficacy and safety of multimodal treatment in nocturnal enuresis: A retrospective cohort study.

S.I.R. Meyer *, C.S. Jørgensen, K. Kamperis, R.F. Andersen, M.J. Pedersen, M.F.aerch, S. Rittig

Journal of Pediatric Urology, <https://doi.org/10.1016/j.jpurol.2021.03.005>

Abstract

The authors present the results of a retrospective analysis of a clinic cohort of children with primary nocturnal enuresis that had failed to respond to first line treatment of the alarm and/or desmopressin. They identified 59 children seen in 2017; the mean age was 9.6 +/-2.3 years and approximately half of the cohort had MNE (49%) and half NMNE (51%). All children had frequent wetting (mean number of wet nights/week prior to combination treatment was 6.5).

To start with they asked the children to complete home recordings, ascertaining the presence of nocturnal polyuria (nocturnal urinary volume >130% of EBC) and bladder capacity, and based subsequent combination treatments on the presence/absence of nocturnal polyuria using a treatment flowchart. Of the 50 children who had complete home recordings to ascertain enuretic phenotype, 42% had a small bladder capacity, 20% nocturnal polyuria, 26% both small bladder capacity + nocturnal polyuria and 12% had normal bladder capacity + normal overnight urine production (this latter group did the worst with regards to treatment).

Treatments used included the alarm, desmopressin, oxybutynin, solifenacin, imipramine, indomethacin, frusemide and mirabegron in various combinations (minimum of two and maximum of four combined). Anywhere between 1 to 12 different combinations were tried in each child. They followed up the children for 31 weeks. 64% of children achieved a full response, 15% a partial response and 20% no response. Desmopressin, imipramine and solifenacin, were the most utilised drugs in the combinations.

For children with MNE the most effective combination was desmopressin and imipramine (response in 44%) followed by desmopressin, imipramine and solifenacin (response in 17%).

For children with NMNE, the most effective combinations were desmopressin, imipramine and solifenacin (22%) and desmopressin, solifenacin and mirabegron (22%).

The enuretic phenotype did not predict response except for the normal phenotype who had the worst outcomes. Phenotypes with a small bladder capacity did better on combinations including anticholinergics. Older children responded more fully than younger children. Of a total of 217 combinations tried, 27 (12%) resulted in parental report of minor side effects including headache, dizziness, gastrointestinal side effects, post void residual, behavioural issues, depression and tics. In three cases this resulted in discontinuing the medication.

Implications for Practice

Approximately one third of children with NE will not respond to first line treatment of alarm and/or desmopressin and two thirds of these non-responders are able to become dry with subsequent combination therapy. However, there is a paucity of evidence for combinations and many of the medications are unlicensed for use in children.

This is one of the few studies that provides a systematic scheme for combination treatment and importantly characterises the baseline enuretic type (MNE/NMNE) and phenotype (bladder capacity and nocturnal polyuria), although the study is small, retrospective and uncontrolled.

The most successful combination was desmopressin and imipramine with the addition of solifenacin and/or mirabegron often needed to achieve a response in NMNE compared to MNE (reflecting the underlying bladder overactivity in NMNE). Desmopressin was necessary in almost all combinations (96%) regardless of the presence/absence of polyuria, showing that reduction in urine volume overnight appears to be useful in all scenarios. Imipramine was widely used in 76% of combinations and solifenacin in 73%.

Side effects overall are mainly mild and well-tolerated but fairly commonly reported by children (30%). The small group of children with normal bladder capacity and overnight urinary production were very resistant to treatment suggesting that the two underlying factors of bladder dysfunction and polyuria are potentially not a pathophysiological feature in these children.

This paper has highlighted the need for further investigation and research into non-first-line-responsive enuresis requiring combination therapy. The practice of establishing a baseline home recording for bladder capacity (frequency/volume chart or bladder diary) and overnight urinary volumes is to be recommended as a baseline to direct therapy.

It appears that imipramine is useful in combination with desmopressin and anticholinergics and it is licensed for use. It is however associated with more side effects and like all medication can be dangerous in overdose.

It is time to focus the spotlight on the group of enuretic children who are often older, more frustrated and down-hearted, and deserve the evidence-base which serves the first-line responders.

2. Effect of desmopressin lyophilisate (MELT) plus anticholinergics combination on functional bladder capacity and therapeutic outcome as the first-line treatment for primary monosymptomatic nocturnal enuresis: A randomised clinical trial.

M. Shim¹, W.J Bang¹, C.Y. Oh¹, M.J. Kang², J.S. Cho¹

Investig Clin Urol 2021;62:331-339.

<https://doi.org/10.4111/icu.20200303> p/ISSN 2466-0493 • e/ISSN 2466-054X

Abstract

This article assesses whether using a combination of an anticholinergic medication with desmopressin, versus desmopressin alone is more effective in terms of complete response and reduced rates of relapse after treatment ceases. This was a prospective, randomised controlled trial, that included 99 children (65 boys, 35 girls) with primary monosymptomatic nocturnal enuresis (PMNE) which was limited by a lack of blinding and absence of a placebo arm.

The authors acknowledge that monotherapy alone may be adequate treatment and adding an anticholinergic as first-line treatment risks over-treatment.

Implications for practice

The study showed that functional bladder capacity increased significantly in the responders group on combination treatment, even in the absence of daytime bladder symptoms. The study suggests that increasing functional bladder capacity improves response rates and reduces relapse post-treatment.

The authors hypothesise this may be due to occult bladder overactivity in the PNME group studied, and/or the effect of anticholinergics on the CNS.

This study gives support to the strategy of using an anticholinergic early, perhaps within the first 3 months, in children with PMNE where response to desmomet alone is incomplete or poor.

3. Definitions, indications and practice of urotherapy in children and adolescents: - A standardization document of the International Children's Continence Society (ICCS)

A.J. Nieuwhof-Leppink a, *, J. Hussong b, J. Chase c, J. Larsson d, C. Renson e, P. Hoebeke e, S. Yang f, A. von Gontard b

Investig Clin Urol 2021;62:331-339.

Journal of Paediatric Urology: April 2021 Volume 17, Issue 2, P139-282

Abstract

This selective review article from the International Children's Continence Society attempts to define the principles of urotherapy (the interventions for lower urinary tract (LUT) dysfunction that do not include surgery or pharmacology), its clinical indications and how it is used in practice. The aim of urotherapy is to promote normal voiding and bowel emptying habits and reduce functional issues by repetition; to improve quality of life: and to increase symptom control.

It is a 'selective, non-systematic review' that aims to provide recommendations on its use to a wide audience spanning primary, secondary and tertiary care, as well as areas for research on urotherapy.

Standard urotherapy is described as including explanations to the child and family; information on behaviour modification, including regular toileting, toilet position, avoiding withholding etc; lifestyle advice around diet and fluid intake, timed voiding; monitoring symptoms and voiding using diaries; frequency-volume charts and apps; and provision of regular follow up and support.

Specific urotherapy provided where indicated for particular LUTs includes alarms, biofeedback, pelvic floor training, neurostimulation, CIC etc.

The paper reinforces the importance of listening to the child as well as the family, of treating bowel issues first, then standard urotherapy as first line treatment for daytime wetting and non-monosymptomatic enuresis. Standard urotherapy is recommended for an initial four weeks and a maximum of three months with frequent follow-up.

Specific urotherapy includes timed voiding, the main indicators for which are voiding postponement and urge incontinence; bladder training for all forms of urinary incontinence; pelvic floor muscle training to achieve relaxed and unobstructed voiding to complete emptying, with or without biofeedback for dysfunctional voiding; central inhibition training by gradually increasing the time between voids and neurostimulation for overactive bladder; positioning for girls with urethrovaginal reflux; double voiding for children with post void residuals; and clean intermittent catheterisation for severe post void residuals.

It is recommended that if urotherapy is unsuccessful, considerations should be made as to whether the diagnosis was correct and if urodynamic and further examination is required. The authors identify that behavioural or psychosocial issues may impact on urotherapy and that plans should be individualised according to need.

The quality of evidence to support use of urotherapy was somewhat limited due to lack of RCT's, other than for alarm treatment in nocturnal enuresis. Consensus expert opinion from ICCS members was utilised where there was a lack of good quality evidence.

Implications for practice

This article states that urotherapy is a first-line, specialised and effective treatment for all aspects of bladder and bowel dysfunction and is based on the principles of CBT (Cognitive Behavioural Therapy). It describes the 'standard' and 'specialised' forms of urotherapy and the clinical indications for their use. It may be used in conjunction with pharmacological treatment.

Attention is drawn to neurodevelopmental and mood disorders which can reduce efficacy of urotherapy and the need for further, better quality research in order to evidence its efficacy and provide an evidence-based approach to urotherapy training.

4. Disposable diaper overuse is associated with primary enuresis in children.

X. Li, J.G. Wen, T.S., X.Q. Yang, S. X. Peng, X.Z. Wang, H. Xie, X.D. Wu & Y.K. Du

Scientific Reports Nature Research (2020) 10:14407 |

<https://doi.org/10.1038/s41598-020-70195-8>

Abstract

This retrospective case-controlled study considered whether there is a relationship between prolonged use of nappies in infancy and primary enuresis. The authors had investigated enuresis in mainland China in 2006 and 2017 and found an increase in prevalence in five-year-olds in that time from 11.83% to 15.13%. They hypothesised that this change could be related to an increase in use of disposable nappies, alongside reduction in traditional methods of toilet training and a resulting increase in children's age at toilet training.

376 children with primary enuresis and 379 healthy age and gender-matched children were included. The children with enuresis were toilet trained at 24-32 months (median 26 months), while the children who were dry at night were toilet trained at 18-25 months (median 20 months).

In the control group 78.4% of the children had parents who practiced infant elimination communication (EC). This is the traditional method of toilet training in China and involves the parent learning when the child is voiding or opening their bowels and physically assisting them, by holding them in an appropriate place to urinate and defecate from early infancy. Only 41.8% of the children in the primary enuresis group had undergone EC. They found that the age at which daytime nappy use ended was significantly associated with primary enuresis, with a reduction in enuresis of 81% in those who were not using nappies from 17 months or earlier and of 75% in those who stopped using nappies at 18-24 months of age. They also found that enuresis was positively associated with nappy use after the age of 21 months.

The authors suggest that the explanation for the positive association that they found between toilet training later and bedwetting may be due to use of disposable products at night conditioning the brain to ignore the bladder and that loss of the sensation of being wet, may have a negative impact on the link between brain and bladder.

Further, the practice of EC may increase the young child's perception of bladder filling, which may support the sphincter development for active control.

The study limitations include its retrospective design, that cannot fully control bias and the ethnic and geographic limitations of being hospital-based. There were also differences between the control group and the children with enuresis that may have been significant. These include 21.8% of the children with enuresis had a family history, but only 2.5% of the controls, 31.4% had lower urinary tract symptoms, compared to 12.1% of the controls and 19.8% had constipation, compared to 13.2% of the controls.

The authors acknowledge that causal association between later nappy use and enuresis cannot be established, and further prospective studies are required.

Implications for practice

Previous studies have demonstrated an association between later toilet training and bladder problems. The age of completion of toilet training has increased in recent decades, particularly in Western societies. Alongside this there is an apparent increase in lower urinary tract dysfunction.

Although further research is required and the limitations of this study should be recognised, it appears to add to the body of evidence that suggests early initiation of toilet training is of benefit to bladder control later in childhood. The authors found that toilet training prior to 21 months of age may help prevent nighttime wetting.

NEW Bladder & Bowel UK Leaflets

At **Bladder & Bowel UK**, we are continuously reviewing and updating our existing resources and creating new ones for children and families (as well as adults) who are affected by continence conditions. The following are new or newly reviewed:

- Children's continence poster: <https://www.bbuk.org.uk/wp-content/uploads/2020/11/World-Continence-Day-2020-Poster-4.pdf>
- Toilet training children: a skill development programme <https://www.bbuk.org.uk/wp-content/uploads/2021/02/Toilet-training-a-skill-development-programme-.pdf>
- Guidance for the Provision of Continence Containment Products to Children and Young People 2021 <https://www.bbuk.org.uk/wp-content/uploads/2021/08/Guidance-for-the-provision-of-continence-containment-products-to-children-2021.pdf>
- Discussing the use of continence products during menstruation: <https://www.bbuk.org.uk/wp-content/uploads/2021/04/The-use-of-continence-products-during-menstruation.pdf>

Bladder & Bowel UK resources for children and young people

Bladder & Bowel UK have a range of resources for children and young people and their families on our website.

View our children's resources here: <https://www.bbuk.org.uk/children-young-people/children-resources/>

Our resources for professionals are here: <https://www.bbuk.org.uk/professionals-resources/>

Contact Bladder & Bowel UK for more information.

Bladder & Bowel UK have a national helpline for anyone affected by a bladder and/or bowel issues, including patients, families, carers and the professionals who support them.

The telephone number for the helpline is 0161 214 4591. You can also contact us by completing the web form at <https://www.bbuk.org.uk/helpline-enquiries/>

Bladder & Bowel UK produce a professional's electronic newsletter every two months. If you, or a colleague, are not receiving this, but want to stay up-to-date with developments in continence care and find out about our educational events, then email us at bbuk@disabledliving.co.uk and ask to be added to the mailing list.

Bladder & Bowel UK Training

Bladder & Bowel UK offers a wide range of highly reviewed education and training about bladder and bowel health and continence conditions. This training is suitable for health, education and social care professionals who work with children young people or adults. Contact us for more information.

We offer fully bespoke training and individualized packages, either face-to-face or virtually, which is fully tailored to meet individual service or professional needs and objectives. This is delivered at cost-effective prices.

Contact us at bbuk@disabledliving.co.uk to discuss your requirements and for a quote.

Bladder & Bowel UK's Symposium

A new and exciting programme!

Wednesday 9th March 2022 at Bolton Arena, Horwich



3 Parallel Sessions

- Full paediatric programme
- Full adult programme
- Gain CPD participatory hours

What to expect

Participatory and reflective sessions including:

- IBS in children
- Psychology of continence difficulties in children
- Use of TENS in children
- Constipation in children - the SUCCESS study

Find out more

To book a place, please visit: www.bbuk.org.uk

For more information, contact the BBUK team on: 0161 214 4591

or send an email to: bbuk@disabledliving.co.uk



Bladder & Bowel UK

Supporting people with bladder and bowel problems

part of Disabled Living

Registered charity no: 224742

Enuresis Award 2021

The 2021 Enuresis Award is now open for entries!

The aim of the award is to recognise excellence in enuresis care. The winner will have the opportunity to showcase their work at our National Continence Symposium that includes a full day of paediatric continence education.

Have you, or your team, been innovative and made a difference to the care of children or young people with bedwetting?

Did you take a novel approach to service provision during the Covid-19 crisis with the challenges that brought?

If so, we would encourage you to apply for the Bladder & Bowel UK Enuresis Award 2021.

Applicants should be able to demonstrate how they, or their team, have been striving for excellence in the care of children and young people with bedwetting.

To apply complete the application form below and submit a 500-word summary, detailing the work you have undertaken. This should include:

- Project title and description
- What you have done and the motivations for the work.
- Any preparation undertaken prior to starting the project
- The impacts on the care offered to children and young people and their families
- How your work or project has been evaluated
- Future plans for practice, the next steps with your project

Applications close on Friday 24th September 2021.

For more information visit <https://www.bbuk.org.uk/enuresis-award/>

Sharing Best Practice

Bladder & Bowel UK bespoke training

For more information about bespoke training email:
bbuk@disabledliving.co.uk

Bladder & Bowel UK Annual Continence Symposiums

Bolton Arena, Horwich: 9th March 2022 & Coventry: TBA

More information available at: www.bbuk.org.uk/professionals/professionals-training/training-symposium/

Stay up to date

To keep in touch with Bladder & Bowel UK's news and developments in continence care sign up to receive our professional electronic newsletters email us at info@bbuk.org.uk.

Resources for professionals

Specialist resources and guidance, including free downloadable resources, are available at our website and by following this link:
www.bbuk.org.uk.

Editorial Group

Dr Fiona Cameron (community paediatrician), Dr Paula Drummond (consultant community paediatrician), Dr Catriona Morrison (consultant paediatrician), Davina Richardson (children's specialist nurse), Dr Anne Wright (consultant paediatrician).

Bladder & Bowel UK, Disabled Living, Burrows House, 10 Priestley Road, Wardley Industrial Estate, Worsley, Manchester, M28 2LY

Email: bbuk@disabledliving.co.uk | Tel: 0161 214 4591