CHEO
child & youth

Pediatric Telehealth Rounds

Today's topic:
Enuresis

Speaker:
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PGY3 Pediatrics, CHEO

Date: February 20, 2015

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Please feel free to ask questions!

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Questions?
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Declaration of conflict

Speaker has nothing to disclose with regard to commercial support.

Speaker does not plan to discuss unlabeled/ investigational uses of commercial product.

Objectives

- Define Enuresis and its subtypes
- Pathophysiology of enuresis
- Approach to diagnosis and management

Definition

- Primary Monosymptomatic Nocturnal Enuresis
  - Lifelong enuresis without hx of UTI or bladder dysfunction
- Nonmonosymptomatic Nocturnal Enuresis
  - Broad category for those who do not fit criteria above
    - Ie enuresis due to UTI, diurnal enuresis, anatomical or neurogenic bladder dysfunction
- Secondary Enuresis
  - Onset of enuresis after continence achieved for >6months

Epidemiology

- 10-15% of 5yo
- 6-8% 8 yo
- 1-2% by age 15

- Risk Factors:
  - Male
  - ADHD
  - Family history in first degree relative

Physiology

- Commonality between all children with enuresis are problems with sleep arousal
  - Distinguished from those with nocturia (child awakens to void)
- Subgroup of PMNE will have nocturnal polyuria (NP)
  - EBC = 30ml + (age x 30ml)
  - Suspect NP when urine production >130% EBC
  - Screen for conditions associated with NP: OSA, cardiac abnormalities, metabolic conditions, excess salt/fluid intake
- Small bladder capacity
  - Max voided volume <50% EBC, small frequent voids during day
- Overactive bladder – urinary urgency, frequency
- Genetics

Evaluation

- Complete history and physical exam!
- Goal of questioning:
  - Categorize type of enuresis which will guide management
  - Assess impact on child and family

Evaluation Cont'd…

TABLE 1. Rapid Screen to Determine Type of Enuresis

QUESTION	IF RESPONSE IS POSITIVE, THEN CONSIDER
Previously dry for 6 months	NMNE or SNE
Associated with daytime urine control issues	NMNE
Constipation or fecal soiling	NMNE
Severe recent stress	SNE
If responses to all above questions are negative, then consider	MNE

MNE=monosymptomatic nocturnal enuresis; NMNE=nonmonosymptomatic nocturnal enuresis; SNE=secondary nocturnal enuresis.

Evaluation Cont'd…

- Other aspects of history:
  - Quantify urinary output
  - Bed time routine
  - Bowel routine
  - Snoring/sleep apnea
  - Degree to which child is impacted and interested in treatment
  - What specific solutions have been attempted?

Evaluation Cont'd…

- Physical Exam
  - Genital exam – labial adhesions, meatal stenosis
  - Rectal exam – perianal tears, fissures, impacted stool
  - Neurologic exam – rectal tone, perineal sensation, sacral dimples, tufts of hair, asymmetric gluteal fold, other midline defects – underlying spinal cord problem
  - Abdo exam – distended bladder, palpable stool
  - Oropharynx – size and location of tonsils

Evaluation Cont'd…

- ICCS recommends urinalysis as the ONLY diagnostic test!
  - Proteinuria, hematuria
  - R/O UTI
  - Low specific gravity – consider DI

Evaluation Cont'd…

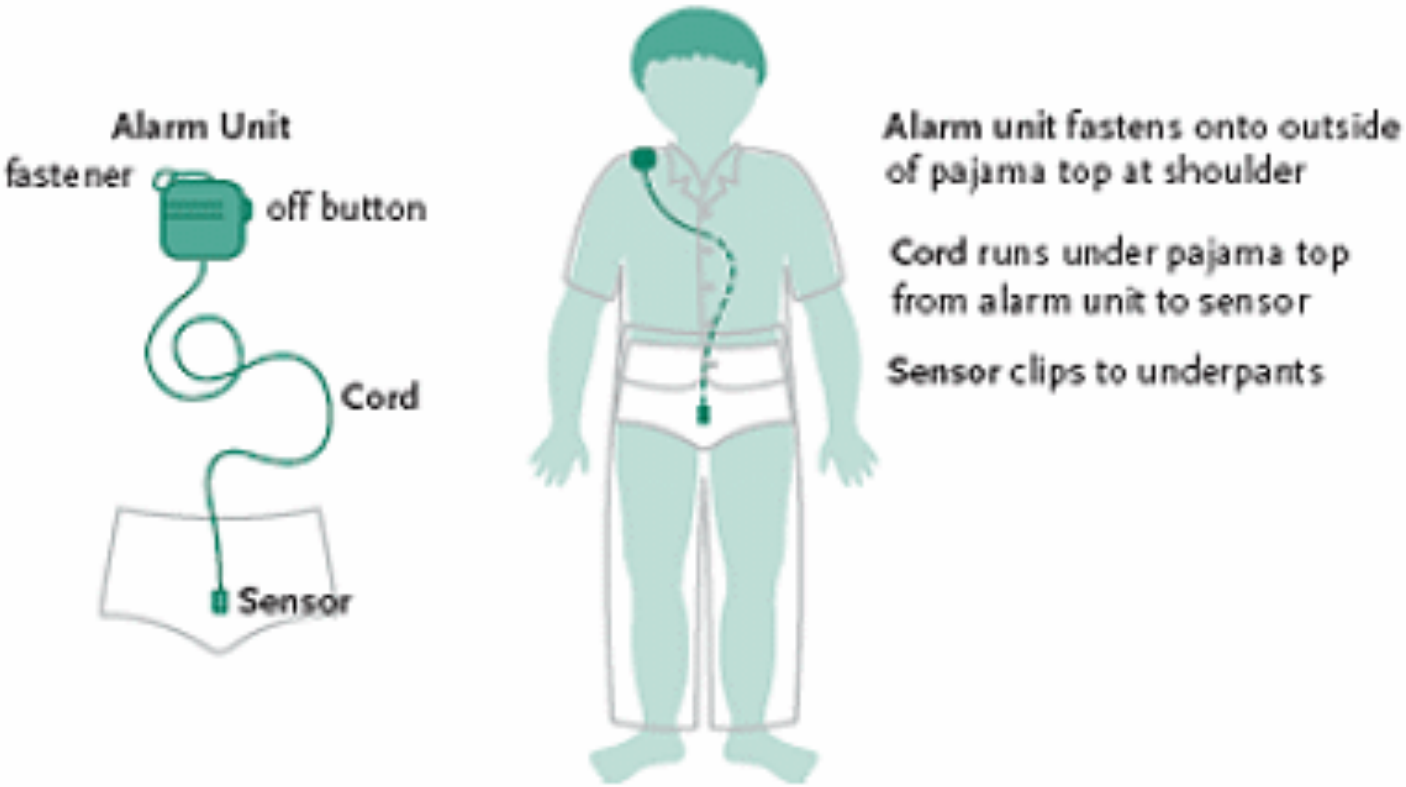
- Elimination Diary
  - Bladder diary – timing and volume of voids, volume of nocturnal urine by weighing bedsheets and clothes
  - Stool diary – timing and number of stools
  - Fluid intake diary

Management

- All children
  - Limit fluid and solute consumption during evening hours
    - 2/3 during day, 1/3 in evening, no fluid before bed
  - Stable and reliable bedtime routine
  - Empty bladder before going to bed and if waking during the night
  - Bowel regimen

Management Cont'd…

- Bed Wetting Alarm
  - Alarm sounds in response to urination and child awakens
  - Child should go to bathroom and assist with changing sheets upon return
  - Transfer waking sensation to full bladder
  - Most effective 7-8yo
  - Depends on motivation of child and family
  - May take weeks to months to work
  - Cure rate: variable, <50%


Alarm Unit
fastener
off button
Cord
Sensor
Alarm unit fastens onto outside of pajama top at shoulder
Cord runs under pajama top from alarm unit to sensor
Sensor clips to underpants

Management Cont'd…

- Desmopressin
  - Synthetic ADH analog
  - Some children show altered pattern of ADH secretion at night →high urine volumes
  - Efficacy variable, cochrane SR 1-2 fewer wet nights, cure rate similar to placebo
  - Side effects: head ache, abdo pain, risk of hyponatremia
  - Avoid fluids 1 hr prior to intake and 8 hrs after
  - Practical for short term use, camps, sleepovers, etc

Management Cont'd…

- Other Pharma
  - Imiprimine
    - TCA, mechanism unknown, risk QT prolongation so not first line and only in refractory cases
    - Might be more effective in children with ADHD
  - Anticholinergics, oxybutinin
    - Not first line, consider in refractory cases by specialist

Management Cont'd…

- Other
  - Reward systems
  - Avoid punishment and humiliation
- Complementary and Alternative
  - Acupuncture, hypnosis →insufficient evidence to recommend

CPS - Enuresis

- Recommendations:
  - Avoid caffeine containing foods and excessive fluids before bedtime
  - Empty bladder before bed
  - Take child out of diapers, training pants may be acceptable
  - Include child in morning cleanup in non-punitive manner
  - For the non-distressed child – no tx indicated, just parental reassurance
  - Bed wetting alarm most effective therapy
  - Desmospressin in special situations
  - Reward systems and lifting no recommended

Summary

- PMNE is common in childhood and most will outgrow it
- Linked to difficulty with sleep arousal
  - Subgroups will have NP, small bladder capacity or overactive bladder
- Complete history and physical exam will guide investigations and management
- Only routine test = urinalysis
- Consider elimination diary in evaluation

Summary Cont'd…

- Initial step in management – lifestyle changes
- Treat constipation!
- Bedwetting alarm and desmopressin are first line agents
- Avoid punishment and humiliation

Thank you!

Questions or Comments?

Video-conferencers:
Unmute your system to ask a question

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Thank you!

for participating in today's

Pediatric Telehealth Rounds

Join us next time:

Burns and Outpatient Department

Dr. Claudia Malic

March 6, 2015

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