Research Article

Indonesian Urologists' Current Practice on Nocturnal Enuresis

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Abstract

Nocturnal enuresis (NE) is a symptom and a condition of intermittent incontinence which takes place during periods of sleep. Being the most common form of incontinence in children, the prevalence of NE in Indonesia is 2.3%. The objective of the study was to review Indonesian urologists' current practice on NE. This was a descriptive cross-sectional study using a self-constructed questionnaire which was distributed during several urological scientific meetings from August 2017 until August 2018. Indonesian urologists were asked to fill out these questionnaires which contained characteristics of the respondents and NE patients they had seen in their practices, diagnostic modalities and treatment options for NE. 133 out of 400 urologists participated. Most urologists had to deal with 1-5 cases NE per month. It was most commonly seen in 5-10 age group and affecting more girls than boys (45.9% vs 27.8% respectively). Approximately only half of Indonesian urologists utilized bladder diary for NE cases. Almost 90% urologist educated and proposed lifestyle intervention to manage NE. Alarm therapy and desmopressin was chosen by 51.1% and 21.8% of urologists respectively as treatment. Desmopressin was still less commonly prescribed compared to antimuscarinic and beta 3 agonist. To conclude, diagnostic strategies for NE are mostly in accordance with available guidelines although bladder diary was only opted by approximately half of urologists. Regarding treatment, education, lifestyle intervention and alarm therapy were the most form of treatment utilized for this condition.
Keywords: *nocturnal enuresis, urologists, diagnosis, management.*

Praktik Terkini Spesialis Urologi Indonesia dalam Menangani Enuresis Nokturnal

Abstrak

Enuresis nokturnal adalah bentuk inkontinensia urine intermiten yang terjadi saat tidur yang merupakan inkontinensia urine tersering pada anak dengan prevalensi di Indonesia 2,3%. Tujuan penelitian ini adalah mengetahui praktik terkini dokter spesialis urologi dalam menangani enuresis nokturnal. Studi deskriptif potong lintang ini menggunakan kuesioner yang dibagikan pada dokter spesialis urologi pada bulan Agustus 2017–Agustus 2018. Sebanyak 133 dari 400 spesialis urologi berpartisipasi dalam studi ini. Mayoritas spesialis urologi mendapat 1-5 kasus enuresis nokturnal per bulan. Usia pasien tersering adalah 5-10 tahun dan lebih banyak anak perempuan dibandingkan anak laki-laki (45,9% vs 27,8%). Setengah spesialis urologi menggunakan catatan harian berkemih untuk diagnosis enuresis nokturnal. Hampir 90% responden memilih edukasi dan intervensi gaya hidup sebagai tata laksana. Terapi alarm dan desmopressin digunakan oleh 51,1% dan 21,8% responden untuk terapi. Anti-muskarinik dan beta-3-agonis lebih sering diberikan dibandingkan desmopressin. Disimpulkan strategi diagnostik untuk enuresis nokturnal telah sesuai dengan panduan tata laksana kecuali untuk catatan harian berkemih. Terapi yang paling banyak dipilih adalah edukasi, intervensi gaya hidup, dan terapi alarm.
Kata kunci*: enuresis nokturnal, spesialis urologi, diagnosis, manajemen.*

Introduction

Nocturnal enuresis (NE) is defined as a symptom and a condition of intermittent incontinence which takes place during periods of sleep.[1] It is divided into two categories which are monosymptomatic and nonmonosymptomatic. Monosymptomatic NE occurs exclusively during sleep, without day time symptoms nor abnormality in urological and central nervous system in children above five years of age whereas nonmonosymptomatic NE is accompanied with day time symptoms, recurrent urinary tract infections (UTIs), and/or bowel dysfunction. It is also classified as primary or secondary NE. The latter term is used when incontinence occurs again after a dry period of six months.[2]

The prevalence of monosymptomatic NE is up to 5% to 10% at 7 years, and 1% to 2% in adolescents. A multicenter survey done in Indonesia involving 477 children revealed that enuresis (2.3%) and urgency urinary incontinence (2.1%) are the two most common conditions.[3] Genetic plays a role in NE[4] and is more frequent in boys than girls (2:1).[5]

The impact of NE on quality of life of both the child and parents is substantial. Feelings of shame, guilt, embarrassment, and helplessness often surface which may affect the child and parents' wellbeing besides the risk of developing UTI.

Indonesian Continence Society (InaCS) has recently published a national guideline for NE in 2018.[6] However, in daily practice challenges still remains among physicians, the children and their parents when it comes to managing NE.

The aim of the study was to review Indonesian urologists' current practice on NE in terms of diagnosis and therapy.

Methods

This was a descriptive cross-sectional study using a self-constructed questionnaire which was distributed during several urological scientific meetings from August 2017 until August 2018. Indonesian urologists were asked to fill out these questionnaires which contained characteristics of the respondents and NE patients they had seen in their practices, diagnostic modalities and treatment options for NE. After seeking ethical approval from The Ethics Committee Faculty of Medicine Universitas Indonesia – dr. Cipto Mangunkusumo National Hospital, it was decided that for this study ethical clearance was not required.

Results

Out of 400 Indonesia urologists, one hundred and 33 participated, filled and returned the questionnaires. Most of them were between the age of 30-39 years (41.4%), worked in government teaching hospital (41.4%), with two years work experience (24%). The characteristics of the respondents are shown in Table 1.

Table 1. Characteristics of Respondents (n=133)

Characteristics of Respondents	Total
Age (years)	
25-29	32 (24.1%)
30-39	55 (41.4%)
40-49	31 (23.3%)
50-60	14 (10.5%)
> 60	1 (0.8%)
Work experience (years)	
<1	6 (4.6%)
1	19 (14.3%)
2	32 (24%)
3-5	29 (21.8%)
5-10	24 (18%)
11-20	22 (16.5%)
> 20	1 (0.8%)
Types of hospital/clinic	
Government teaching hospital	55 (41.4%)
Private non-teaching hospital	42 (31.6%)
Government non-teaching hospital	26 (19.5%)
Teaching private hospital	4 (3%)
Private clinic	2 (1.5%)
Location of practice	
Jabodetabek	32 (24.1%)
Java non Jabodetabek	64 (48.1%)
Outside Java	37 (27.8%)

Most of the respondents dealt with 1-5 cases NE per month which translates to 12–60 cases per year. The most common age group of NE patients were 5-10 years old and was more commonly seen in girls than boys. Monosymptomatic NE was more frequent than nonmonosymptomatic NE (67.7% vs 17.3% respectively) with a more prominent prevalence of primary cases rather than secondary NE. The characteristics of NE patients are depicted in Table 2.

Table 2. Nocturnal Enuresis Patients Treated by Indonesian Urologists (n=133)

Characteristics of Patients	Total
Number of Patients (per month)	
1-5	116 (87.2%)
6-10	13 (9.8%)
11-20	2 (1.5%)
>20	2 (1.5%)
Age Group (years)	
<5	44 (33.1%)
5-10	68 (51.1%)
11-15	11 (8.3%)
16-18	1 (0.8%)
> 18	9 (6.8%)
Gender	
Boys	37 (27.8%)
Girls	61 (45.9%)
Equal number of boys and girls	35 (26.3%)
Length of Symptom	
< 2 weeks	8 (6%)
2-4 weeks	22 (16.5%)
1-3 months	30 (22.6%)
> 3 months	30 (22.6%)
> 6 months	25 (18.8%)
> 1 year	18 (13.5%)
Enuresis Symptoms	
Monosymptomatic enuresis	90 (67.7%)
Nonmonosymptomatic enuresis	23 (17.3%)
Equal number of monosymptomatic and nonmonosymptomatic enuresis	20 (15%)
Types of enuresis	
Primary enuresis	67 (50.4%)
Secondary enuresis	47 (23.5%)
Equal number of primary and secondary enuresis	19 (14.3%)

Table 3. Modalities for Nocturnal Enuresis Diagnosis (n=133)

Modalities	Total
History	131 (98.5%)
Physical examination	113 (85.7%)
Voiding diary	78 (58.6%)
Urinalysis	98 (73.7%)
Blood sugar	33 (24.8%)
Renal function test	55 (41.4%)
Uroflowmetry	19 (14.3%)
Post void residual urine	19 (14.3%)
Urodynamic	13 (9.8%)
Urinary tract ultrasound	87 (65.4%)
Cystoscopy	1 (0.8%)

Described in Table 3, history (98.5%), physical examination (85.7%), urinalysis (73.7%), urinary tract ultrasound (65.4) and voiding diary (58.6%) were the most common modalities for NE diagnosis.

For NE treatment, education and lifestyle intervention ranked first place (87.2%) followed by alarm therapy (51.1%), and pharmacotherapy using antimuscarinic (38.3%) and desmopressin (21.8%) as shown in Table 4. Few urologists (26.4%) would refer NE cases to a urology subspecialist.

Table 4. Treatment Options for Nocturnal Enuresis (n=133)

Treatment Options	Total
Education and lifestyle intervention	116 (87.2%)
Desmopressin	29 (21.8%)
Antimuscarinic	51 (38.3%)
Beta 3 agonist	35 (28.2%)
Imipramine	22 (16.5%)
Alarm therapy	68 (51.1%)
Physiotherapy	31 (23.3%)
Psychiatric consultation	13 (9.8%)
Referral to subspecialist	35 (26.4%)
Antidepressant	2 (1.6%)

Discussions

NE is a common problem in children, with range prevalence of 9.3-16.4% in 7 years old children according to several studies in Asia.[7,8] A study in Indonesia revealed a lower prevalence (2.3%) of NE.[3] This study shows that Indonesian urologists had to face up with 1-5 NE patients per month, most frequently between 5-10 and very rarely above 10 years old. This might be due to spontaneous yearly resolution rate of 15% in all ages.[9] It is reported to be more commonly seen in boys than in girls, however in this study more female NE patients were treated by Indonesian urologists. Sumardi et al[3] on the other hand reported no gender domination. Monosymptomatic NE was more common than non-monosymptomatic NE. This is in agreement with a study done by Butler et al[10] which demonstrated a lower prevalence of non-monosymptomatic NE (31.5%) compared to monosymptomatic NE (68.5%).Urologists dealt with more primary NE cases rather than secondary NE as was reported by another study conducted in primary school and preschool children.[11]

As for diagnosis, history and physical examination were the two top tools for NE. It is mandatory to explore drinking and voiding habits (complaints of frequency and urgency), history of UTI, comorbodities, behavioral and/or psychiatric problems and how the condition affects the child and

parents' quality of life. Body mass index, detection of growth retardation, failure to thrive, a focused examination of external genitalia and surrounding skin, spine region and a simple neurological test are pivotal for NE patients.[2,6]

Urinalysis was ranked third in diagnostic modalities. Urologists frequently ordered it to rule out UTI. It is indicated when there's a history of UTI, onset of NE is sudden, or there are symptoms of diabetes mellitus type 1.[2]

The pathophysiology of NE comprises of high night time arousal,[4] high urine output at night or low night bladder capacity or overactive bladder. Those can be objectively assessed by voiding diary. A two days diary including drinking, voiding diary and urinary production can provide substantial information.[2] Only 58.6% urologists used voiding diary, this might be explained by the challenges that may arise in applying it especially in children aside from its obvious advantages. Urologists should take the time to communicate not only with the child but also with the parents, suggesting a collaboration to ensure optimal voiding diary recording.

Ultrasound of the urinary tract may provide information on the presence of anatomical abnormality of the kidney and bladder and/or a rectum distention. It is indicated in nonmonosymptomatic NE cases, voiding symptoms, history of lower urinary tract surgery or an inconclusive voiding diary.[12]

Education and lifestyle modification are two first steps in NE management, as also chosen by most urologists in this study (87.2%). Education on normal micturition and voiding process as well as the pathophysiology of NE plays an important role in raising the family awareness and clearing any form of guilt and embarrassment. Eating, drinking, voiding and bowel habits are three aspects which should be addressed.[2]

Alarm therapy is one therapeutic option for NE since it may change the arousal state during night time voiding. It also increases nocturnal functional bladder capacity, vasopressin production and leads to a more positive behavioral effect. One study reported 80% success rate of this therapy with low relapse rate.[13] Only around half of urologists in this study opted for alarm therapy. This is understandable considering it is not a simple form of therapy as it requires a collaboration from the whole family.

Another form of treatment is medical management. Desmopressin, an antidiuretic agent, may be considered as a combination with drinking habit adjustments. Water intake should be reduced in the evening when desmopressin is prescribed.[6] A recent study revealed that out of 97 NE children, 77.6% were responsive to 3 months desmopressin therapy.[14] In cases where desmopressin is insufficient, combination treatment with antimuscarinic can be proposed. A metaanalysis concluded that combination therapy of desmopression and antimuscarinic is more effective than desmopressin alone with comparable adverse events.[15]

Indonesian urologists prescribed more antimuscarinic than desmopressin for NE cases. A few urologists prescribed imipramine which has been formerly used as treatment of NE. However, a recent Cohrane review has suggested that although effective, imipramine has failed to show sustainable effect after cessation of treatment.[16]

Physiotherapy is another compelling option which was opted by almost 25% of urologists. A clinical trial in children with NE has proven that physiotherapy in the form of transcutaneous electrical nerve stimulation has no effect on the symptoms.[17]

Conclusion

Current practice of Indonesian urologists in managing NE are mostly in accordance with available guidelines although voiding diary was only opted by approximately half of urologists despite its important role. Regarding treatment, education and lifestyle intervention as the first line therapy mentioned in guidelines was the first treatment choice among urologists. Desmopressin was still prescribed less frequently than antimuscarinic and beta 3 agonist. Since Indonesian Guideline on NE is already available, its dissemination plays a key factor in raising awareness on diagnostic and treatment of NE.

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