

Our experience of treating children with primary monosymptomatic enuresis nocturna in a pediatric bedwetting clinic

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Ethics Committee Approval

Kahramanmaraş Sutcu Imam University Faculty
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All procedures in this study involving human
participants were performed in accordance with
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amendments.

Conflict of Interest

No conflict of interest was declared by the
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Abstract

Background/Aim: Enuresis nocturna is an important problem that negatively affects the self-confidence and quality of life of millions of children. Controversial points still exist regarding the treatment algorithm of enuresis. This study aimed to discuss the approach to this condition which deeply affects the child and their family and contribute to the literature by analyzing the success in the treatment steps.

Methods: This study was conducted by reviewing the files of the patients who presented to the pediatric bedwetting outpatient clinic between May 2017 and March 2019 with the complaint of nocturia. The diagnoses and treatment outcomes were recorded from the patient files. The first step was motivation therapy, the second step was alarm treatment, and the third step was drug therapy, which were combined if necessary.

Results: Among 95 primary monosymptomatic enuresis nocturna patients with a mean age of 8.5 years, all patients received supportive treatment to increase motivation as the first step. The second step consisted of alarm treatment administered to 32 patients and as the third step, medical drug treatment was prescribed to eight. Enuresis decreased in 58% of the patients receiving motivation therapy, 63% of the patients receiving alarm therapy and >90% of the patients receiving drug therapy; however, it relapsed when the medication was discontinued.

Conclusion: According to the experience acquired in this study, a specific enuresis polyclinic is important in terms of ease of presentation for patients, and motivation treatment should be the first line of treatment. Other treatment steps can be added as necessary. All three steps in primary monosymptomatic enuresis nocturna can be combined or administered alone.

Keywords: Enuresis, Bedwetting clinic, Children, Treatment

Introduction

Enuresis is defined as involuntary urination while asleep for no organic reason and is inappropriate in a child older than 5-7 years, which is considered the age of developing urinary control [1-3]. Enuresis nocturna is seen in approximately 25% of children aged 5 years, and with a spontaneous recovery rate of 15% each year, this rate falls to <10% at the age of 7 years [4]. Monosymptomatic enuresis indicates involuntary urination [4-6]. Polysymptomatic enuresis refers to the presence of an added lower urinary system symptom, such as the patient feeling urgency, frequent urination, dysuria, or dripping [4].

Primary enuresis nocturna is defined as the child not having had a dry night for at least 6 months, and secondary enuresis originates from the onset of a new medical condition such as urinary infection, obstructive sleep apnea, diabetes insipidus, diabetes mellitus, hypothyroidism, kidney disease, or a new psychological stress [7-9]. Primary monosymptomatic enuresis nocturna (PMEN) cases constitute more than 80% of all enuresis patients [4, 6].

PMEN leads to problems affecting both the child and their family. Children with PMEN may not wish to see a doctor because of guilt and shame as a result of psychological pressure from the family. The most important step in the treatment of monosymptomatic enuresis nocturna is making enough time for the patient and motivating the child and family to follow the treatment. To achieve this, it is necessary to form a good relationship with the child. When it is explained that there is nothing to be ashamed of and the patient and the family are reassured that it will get better, the patient relaxes and has increased motivation for treatment. Treatment consists of non-pharmacological approaches such as behavioral interventions, alarm devices, bladder exercises, and treatment for constipation if present. Pharmacological agents include desmopressin, tricyclic anti-depressants, and anti-cholinergic medication [3].

The aim of this study was to discuss the treatment approach to patients who presented to the pediatric bedwetting outpatient clinic and were diagnosed with PMEN, and to contribute to the literature by analyzing the success in the treatment steps.

Materials and methods

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Ethics approval was obtained from the tertiary university hospital ethics committee before starting the study (Ethical Committee Approval Number: 07/26/2021).

A retrospective examination was made of the files of 108 patients aged 6-18 years who presented to the pediatric bedwetting outpatient clinic between May 2017 and March 2019 with the complaint of nocturia. A total of 13 patients with secondary or polysymptomatic enuresis nocturna were excluded from the study. Ninety-five patients over the age of 6 years whose only symptom was urination during sleep were included in the study with the diagnosis of PMEN. The anamnesis, physical examination and ultrasound findings of the patients were recorded from the files, together with the treatment protocols applied and the outcomes during follow-up. Following

the described treatment protocol and current guidelines [3], the treatment consisted of three stages: The first stage was behavioral and supportive treatment (encouraging communication, giving rewards when the number of dry wakes increases, etc.), the second stage was alarm treatment, and the third stage was drug (only desmopressin) prescription. Other medications were not used due to side effects. The next stage was tried if unsuccessful in the prior stages, or the treatment steps were combined. The age, gender, and treatment outcomes of the patients were recorded, and the results were evaluated.

Statistical analysis

Statistical analysis was conducted using the Statistical Package for the Social Sciences for Windows (SPSS Inc., Chicago) 22 package program. Variables were expressed as mean (standard deviation) or minimum-maximum. Proportional data about the children were expressed as numbers (n) and percentages (%).

Results

Evaluation was made of a total of 95 patients diagnosed with PMEN, comprising 63 (66%) males and 32 (34%) females with a mean age of 8.5 years (range, 6-18 years). The physical examination, urine examination and urinary system ultrasound examination results were normal in all patients before beginning the treatment. As the first step, all the patients received behavioral therapy, fluid was restricted, and all patients underwent detailed motivational interviews. Alarm treatment was the second stage. The use of the alarm was explained to the family, who used it at their discretion. A total of 32 (34%) patients used the alarm devices. As the third stage, desmopressin was prescribed to 8 (8.4%) patients who attended boarding school. There was no patient who received alarm and drug therapy together.

In all 55 (58%) patients who only received first-stage treatment, the frequency of urination decreased from the first week onwards in all cases, but because of an increase again after 6-8 weeks, there was a request for a further motivational interview. Of the patients who received first and second stage treatment, 20/32 (63%) reported benefit from the alarm treatment, and in these patients there was no loss of motivation and subsequent request for a further motivational interview. In the third stage treatment, desmopressin was used for 3 months, after which the frequency of urination decreased by >90% in all the patients. After terminating the desmopressin treatment, the frequency of urination increased. No drugs other than desmopressin were used. Difficulty in waking from sleep was reported by 82 (86%) patients and not by 13 (14%). There was a history of PMEN in at least one parent of 53 (56%) patients.

Discussion

Enuresis is not only a disease affecting millions of children worldwide, with negative effects on self-confidence and quality of life, but also constitutes a social problem [3]. Involuntary urination creates a feeling of embarrassment in children and they do not wish anyone outside the family to know of it. Treatment of PMEN patients has been attempted by physicians of several branches [3]. To raise awareness and to be able to persuade children to consult doctors comfortably, we

designed a “pediatric bedwetting outpatient clinic” within the Pediatric Surgery Outpatient Clinic. The patients and their parents stated that their concerns about the department and physician to which they should apply were eliminated because of this separate outpatient clinic. The establishment of such a specialized clinic in hospitals will be more useful for PMEN patients than the main branch polyclinics.

It has been reported that when one of the parents has a history of PMEN, the likelihood of seeing it in the child is 44%, and this rate increases to 77% when there is such a history in both parents [3]. In the current study, 56% of the patients had at least one parent with a history of PMEN.

PMEN is considered a benign disease that does not require comprehensive investigation. The most important approach is the taking a detailed history and performing a thorough physical examination during the first evaluation. The American Pediatric Academy and the International Child Continence Association do not recommend routine renal ultrasound in children who present with PMEN [10]. In some publications, urine analysis and/or a bladder diary have been suggested [3-8]. Kovacevic et al. [10] reported that according to their clinical experience, the use of urine analysis as a single test in children with PMEN was generally worrying for parents as they wished to discount anatomic disorders in the urinary tract. All patients in the current study underwent urine analysis and a urinary ultrasound, which turned out normal. Performing these tests in addition to a detailed history and physical examination is debatable and it has been suggested that there is no need for further investigation.

Success in PMEN treatment is the correct diagnosis of the underlying agent. After a diagnosis of PMEN, the child should be talked to and evaluated with at least one of the parents present. Various studies suggest that it should be explained to the child in a comprehensible way that this condition is not a fault of the child, there is no shame, it is extremely common in children and will recover as the child grows [3, 4]. All patients in the current study underwent interviews to motivate and increase the self-confidence of the child. The parents reported that after each interview, the urination reduced.

In recent years, alarm treatment is used extremely frequently, either alone or in combination and as the first option in treatment [11]. Alarm treatment has been reported to condition the nervous system and can increase bladder capacity [3, 12]. When alarm treatment is used regularly for a sufficient period, a success rate of 75% has been reported [3]. However, problems can be experienced such as the family not adapting to the alarm device and abandoning the treatment. In the current study, the use of alarm treatment and the outcomes were explained to the families, who used it at their discretion. In 32 patients, alarm treatment was administered throughout 3 months in addition to the supportive motivation treatment. Of those who used the alarm treatment, 20 (62.5%) reported that they had seen a benefit in the form of staying dry for 2 consecutive weeks.

Pharmacological drugs are recommended as the third line PMEN treatment, and include desmopressin, anti-cholinergic agents, and tricyclic anti-depressants [11, 13]. The efficacy of drug treatments alone or in combination is not clear [3, 13]. Desmopressin was administered to eight of the current study

patients who attended boarding school, as the onset of the effect of this drug is rapid and it has a lower side-effect profile than other drugs. Adolescents at boarding school are embarrassed by their peers but with the early effect of desmopressin taken one hour before going to bed, the number of dry nights increased. However, when desmopressin was discontinued, the frequency of bedwetting increased again.

Alternative treatment methods such as acupuncture, hypnosis, and psychotherapy are also used in PMEN treatment, albeit not routinely. No alternative treatment was given to any of the patients in this study.

Limitations of this study include its retrospective design and the relatively low number of patients. There is a need for further, prospective comparative studies with a greater number of patients.

Conclusion

The status of the patient and their family must be taken into consideration in the selection of treatment. Based on our experience, a specific enuresis outpatient clinic is important in terms of ease of presentation, and motivation treatment should be the first line treatment, with other treatment steps added as necessary. All three steps in PMEN treatment can be administered combined or alone.

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