

Should we treat monosymptomatic enuresis in children?

Çocuklarda monosemptomatik enürezisi tedavi etmeli miyiz?

Sacit Nuri Görgel¹, Osman Köse¹, Nida Dincel², Cengiz Girgin¹

¹ İzmir Katip Çelebi Üniversitesi Atatürk Eğitim ve Araştırma Hastanesi, Üroloji Kliniği, İzmir

² İzmir Katip Çelebi Üniversitesi, Pediatrik Nefroloji Kliniği, İzmir

Abstract

Objective: To evaluate quality of life and sleep in monosymptomatic enuretic children and their mothers before treatment.

Materials and Methods: Two hundred forty cases were included to this study. Of the cases 124 had monosymptomatic enuresis and 116 voluntary children had no health problems. The quality of life was evaluated according to Pediatric Quality of Life Inventory (PEDIQL) in children. Quality of life for their mothers were evaluated using the Short-Form Health Survey (SF-36). Sleep quality of children and their mothers were evaluated according to Pittsburgh Sleep Quality Index (PSQI).

Results: Emotional and school functioning were significantly higher in children with monosymptomatic enuresis than that of controls for child self-report and parent proxy-report (p=0.02, p=0.03 and p=0.03, p=0.04 respectively). The quality of life of the mothers as shown by SF-36, the emotional domain score and bodily pain score were significantly lower compared to controls (p=0.02 and 0.04). However PSQI total and subgroup scores were not statistically significant in between children groups, subjective sleep quality, sleep latency domain scores and total scores in enuretic children's mothers were significantly higher than healthy group (p=0.04, p=0.03 and p=0.02 respectively).

Conclusions: Monosymptomatic enure-

Özet

Amaç: Monosemptomatik enürezisli çocuklarda ve annelerinde tedavi öncesi dönemde hayat ve uyku kalitesini değerlendirmek.

Gereç ve Yöntemler: İki yüz kırk olgu çalışmaya dahil edildi. Olguların 124'ü monosemptomatik enürezisli hasta ve 116'sı sağlık problemi olmayan çocuklardı. Çocuklarda yaşam kalitesi Pediatric Quality of Life Inventory (PEDIQL) ile değerlendirildi. Annelerde hayat kalitesi Short-Form Health Survey (SF-36) ile değerlendirildi. Çocuklarda ve annelerinde hayat kalitesi Pittsburgh Sleep Quality Index (PSQI) ile değerlendirildi.

Bulgular: Emosyonel ve okul fonksiyon skalası monosemptomatik enürezisli çocuklarda 'child self-report and parent proxy-report' kontrol grubuna göre anlamlı olarak yüksekti (p=0.02, p=0.03 ve p=0.03, p=0.04). Annelerin yaşam kalitesinin değerlendirildiği SF-36 ya göre emosyonel ve vücut ağrı skoru enürezisli çocukların annelerinde anlamlı olarak daha düşüktü (p=0.02 ve 0.04). Çocuklar arasında toplam PSQI skoru ve alt gruplarında anlamlı fark saptanmazken subjektif uyku kalitesi, uyku latensi ve PSQI toplam skoru enürezisli çocukların annelerinde anlamlı olarak daha yüksekti (p=0.04, p=0.03 ve p=0.02).

Sonuç: Monosemptomatik enürezis tedavi öncesi dönemde çocukların ve annelerin hayat kalitesini olumsuz olarak etkileyen bir hastalıktır. Ek olarak çocuklarının hastalığı nedeniyle

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Yazışma / Correspondence

Op. Dr. Sacit Nuri Görgel
İzmir Katip Çelebi Üniversitesi
Atatürk Eğitim ve Araştırma
Hastanesi
Basın Sitesi - İzmir
Tel: 0532 688 29 10
Faks: 0232 243 15 30
E-mail: sngorgel@hotmail.com

sis is a disease that negatively affects the quality of life of children and their mothers before treatment. In addition sleep quality of their mothers are adversely affected because of children's disease. Monosymptomatic enuresis should be treated in children because of these reasons.

Key Words: Monosymptomatic Enuresis, Quality of Life, Sleep Quality

Introduction

Enuresis is the condition describing the symptom of incontinence during night. Any wetting during sleep above the age of 5 years is enuresis. However, most importantly, there is a single symptom only. Children with other low urinary tract symptoms and enuresis are said to have non-monosymptomatic enuresis. Thorough history-taking, excluding any other daytime symptoms, is mandatory before diagnosing monosymptomatic enuresis (MNE). Any associated urinary tract symptoms make the condition a 'daytime low urinary tract condition' (1). About 15 to 20% of five-year-old children are bed-wetters with variations in frequency of bedwetting. It is also present in 5% of ten-year-old children and 1% of teenagers (2). Some studies show that boys wet their bed more often than girls, but other studies contradict them (3). The main pathophysiological mechanisms of MNE include decreased functional bladder capacity, increased night-time urine secretion (reduction in antidiuretic hormone secretion), and impaired wakening from sleep at filled bladder (4). Children who are older than six years are treated with bedwetting alarm or desmopressin (5). Sometimes some other medications like anticholinergics are used (6). Before using alarm treatment or medication, simple therapeutic interventions should be considered (7).

Monosymptomatic enuresis causes psychological and social distress in children and their families (8). Studies on children's health related quality of life have been performed for pediatric diseases such as psychiatric diseases and cancers (9,10). Monosymptomatic enuresis can have negative influence on everyday activities, family vacations, and on child's wishes and capabilities to leave home with friends and family (11). These children are known to be sadder, socially distant, anxious, unhappy or even depressed (12).

The aim of our study was to evaluate quality of life and

annelerin uyku kalitesi de bozulmaktadır. Bu nedenlerden dolayı çocuklarda monosemptomatik enürezis tedavi edilmelidir.

Anahtar Kelimeler: Monosemptomatik enürezis, Yaşam kalitesi, Uyku kalitesi

sleep in monosymptomatic enuretic children and their mothers before treatment.

Materials and Methods

A total of 240 families were enrolled in the study between January 2009 and September 2012. Mean age of the children was 9.3 ± 1.5 (8-12) years old. Of the cases, 124 patients had enuresis nocturna and 116 voluntary children had no health problems. The children's quality of life were evaluated according to Pediatric Quality of Life Inventory (PEDSQL) (13). Quality of life for their mothers were evaluated using the Short-Form Health Survey (SF-36) (14). Sleep quality of children and their mothers were evaluated according to Pittsburgh Sleep Quality Index (PSQI) (15).

Patients with concomitant diseases, daytime low urinary tract symptoms, constipation or whose mothers undergoing medical treatment were excluded. Mothers with chronic health problems (physical and/or psychological) were excluded from the study.

Statistical analysis

Independent sample's t-test was used to compare Pittsburgh, PEDSQL, SF-36 scores and mean ages between their mother and children with enuresis and healthy controls. Chi-square test was used for comparisons of non numeric parameters. P value <0.05 was considered significant.

Results

Eighty eight of 124 patients were male (70.9 %) and mean age was 9.5 ± 2.1 years. In the control group 80 of 116 (69.1%) were male and mean age was 9.7 ± 2.2 years. Mean age of the mothers in patient and control groups were 33.4 ± 5.6 and 35.7 ± 6.8 years respectively. The mean age of mothers with enuretic children was comparable to that of the healthy volunteers ($p=0.78$). There were no significant differences between enuretic patients and healthy volunteers in terms of age and gender ($p=0.46$, $p=0.38$).

Table 1. Comparison of the PedsQL scores of child self-report and parent proxy-reporting patients with monosymptomatic enuresis and without monosymptomatic enuresis

	With monosymptomatic enuresis (mean)	SD	Without monosymptomatic enuresis (mean)	SD	p
Child self-report					
Physical functioning	83.42	14.63	85.29	11.98	0.48
Emotional functioning	80.55	18.32	68.32	16.75	0.02
Social functioning	85.48	17.21	86.68	19.01	0.52
School functioning	82.11	15.11	64.35	14.48	0.03
Total score	83.98	16.90	76.90	15.90	0.10
Parent proxy-report					
Physical functioning	78.32	14.42	76.82	13.38	0.76
Emotional functioning	75.46	16.11	64.23	16.75	0.03
Social functioning	77.37	14.22	75.33	15.03	0.66
School functioning	76.42	15.11	63.84	12.53	0.04
Total score	77.66	15.62	72.34	13.42	0.13

Indepented t test

PedQL; Pediatric Quality of Life Inventory, version 4.0

SD; standard deviation

Table 2. Quality of life evaluated with SF-36 of mothers of monosymptomatic enuretic children

	Mothers of children with monosymptomatic enuresis (mean)	SD	Healthy Volunteers (mean)	SD	p
Physical functioning	86.7	11.2	84.4	8.9	0.52
Role physical	84.3	16.2	86.4	14.6	0.66
Bodily pain	66.1	17.0	76.9	22.2	0.04
General health	65.1	16.2	64.9	15.8	0.16
Vitality	63.4	9.8	65.3	12.2	0.68
Social functioning	88.4	14.4	86.5	15.3	0.23
Role emotional	73.1	17.1	89.3	14.6	0.02
Mental health	73.8	16.4	74.6	18.2	0.95

Indepented t test

SF-36; Short-Form Health Survey

SD; standard deviation

Table 3. Pittsburgh Sleep Quality Index total scores and sub-scores in children with monosymptomatic enuresis

	Monosymptomatic enuretic group (mean)	SD	Control group (mean)	SD	p
Subjective sleep quality	0.9	0.4	0.7	0.2	0.43
Sleep latency	0.6	0.3	0.5	0.1	0.23
Sleep duration	0.7	0.2	0.6	0.3	0.31
Sleep efficiency	0.8	0.4	0.6	0.2	0.54
Sleep disturbance	0.7	0.3	0.5	0.3	0.82
Use of hypnotic medications	0.1	0.0	0.0	0.0	0.46
Daytime dysfunction	0.8	0.4	0.7	0.3	0.32
Total score	3.7	1.2	3.6	1.1	0.70

Indepented t test

SD, standard deviation

Emotional and school functioning were significantly higher in patients with monosymptomatic enuresis than that of controls for child self-report and parent proxy-report ($p=0.02$, $p=0.03$ and $p=0.03$, $p=0.04$ respectively) (Table 1). The quality of life of the mothers as shown by SF-36, the emotional domain score and bodily pain were significantly lower compared to controls ($p=0.02$) (Table 2). However PSQI total and sub group scores were not

stastically significant in between children groups (Table 3), subjective sleep quality, sleep latency domain scores and total scores in enuretic children's mothers were significantly higher than healthy group ($p=0.04$, $p=0.03$ and $p=0.02$ respectively) (Table 4). Mean number of enuresis episodes was 11.3 per 2 weeks.

Discussion

Health-related quality of life measures are increasingly

Table 4. Pittsburgh Sleep Quality Index total scores and sub-scores in children's mother with monosymptomatic enuresis and healthy controls

	Mothers of enuretic children (mean)	SD	Control group (mean)	SD	p
Subjective sleep quality	1.3	0.6	0.4	0.3	0.04
Sleep latency	1.4	0.4	0.3	0.2	0.03
Sleep duration	0.6	0.2	0.5	0.2	0.31
Sleep efficiency	0.7	0.3	0.6	0.2	0.54
Sleep disturbance	0.6	0.6	0.5	0.5	0.82
Use of hypnotic medications	0.3	0.1	0.2	0.1	0.46
Daytime dysfunction	0.9	0.5	0.8	0.4	0.32
Total score	5.8	2.4	3.3	1.6	0.02

Indepented t test

SD, standard deviation

being used in an effort to continually improve the quality of the healthcare for pediatric patient health in clinical trials (16). Today, most descriptions of health-related quality of life refer to it as a multidimensional construct (17) that focuses on individuals' subjective evaluation of their physical, psychological (including emotional and cognitive), and social health dimensions described by the World Health Organization (18).

There are numerous of well-developed generic and disease specific health-related quality of life measures for children and adolescents (19). To integrate the merits of generic and disease-specific instruments for children and adolescents, aged 2-18 years old, PedsQL was designed and developed in the US (13). The PedsQL™ 4.0 Generic Core Scales and disease-specific questionnaires have resulted from iterative process and are applicable for healthy schools (20) and community populations (21), as well as pediatric populations with acute (22) and chronic health conditions, such as cancer, cerebral palsy, diabetes, rheumatologic diseases, and end-stage renal disease (23-27).

In our study we used PEDSQL to evaluate quality of life for children. According to child self-report and parent proxy-report emotional and school functioning were significantly higher in patients with monosymptomatic enuresis than that of controls ($p=0.02$, $p=0.03$ and $p=0.03$, $p=0.04$ respectively).

The Short-Form Health Survey (SF-36) is a measure of health status designed for use in clinical practice, research, health policy evaluations, and general population surveys. It includes eight scales that assess the following general health concepts: physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health. All items are

summed and transformed to form a scale from 0 to 100, where a higher score indicates a better state of health or well-being (14).

Chronic diseases in children such as epilepsy or cancer are reported to affect their mothers' psychiatric condition as evaluated by the SF-36 or Self-Rating Depression Scale (SDS) (28,29). Chronic stress is thought to be a risk factor for psychosomatic psychiatric illnesses such as anxiety and depression disorders (30). At the morning of enuretic night, mothers come up against huge cleaning problem, such as changing bedclothes, washing bed linen, which lead to waste of time, deteriorated quality of life and worsed emotional status. The quality of life of the mothers as shown by SF-36, the emotional domain score and bodily pain were significantly lower compared to controls in our study ($p=0.02$). Aksanli et al reported mothers who have a child with monosymptomatic enuresis had significantly lower quality of life scores in the SF-36 for all subscales except for social functioning (31).

The sum of scores for these seven components yields the PSQI global score. PSQI global scores ≤ 5 are defined as "good sleep quality" and scores >5 are defined as "poor sleep quality" (15). We evaluated sleep quality according to PSQI for their mother of children with monosymptomatic enuresis and healthy mothers. Though PSQI total and sub group scores were not stasitically significant in between children groups, subjective sleep quality, sleep latency domain scores and total scores in enuretic children's mothers were significantly higher than healthy group ($p=0.04$, $p=0.03$ and $p=0.02$ respectively). Before appeal for professional medical help for MNE, most of parents tried to wake up their children for urination while they were asleep. Even so most of these children urinate unless awake. Therefore, while quailty of sleep of mot-

hers affected inversly children's were not. On the other hand Eryilmaz et al showed that sleep quality that is directly correlated with quality of life deteriorates in many chronic diseases (32).

In this study we focused on pre-treatment condition of children and mothers, thus the main limitation of our study is absence of post treatment results. Secondly mothers' social, educational and economical status were not evaluated and thirdly small size of groups.

Conclusion

In conclusion, our study showed that childrens' emotional status and school successes, mothers' quality of life and sleep were impressed inversly. Monosymptomatic enuresis is a stressful condition, which puts a high psychological burden on children resulting in low self-esteem. Therefore, it is important to assess and manage MNE in children.

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