Enuresis in Children 5-15 Years at Queen Sirikit National Institute of Child Health

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Abstract

A cross-sectional descriptive study was conducted to compare 179 enuretic and 811 non-enuretic patients at Queen Sirikit National Institute of Child Health from July 1998 through December 1998. The objective was to study the epidemiology, risk factors, behavioral and learning problems associated with enuresis in children 5-15 years old. Chi-squared analysis was used.

The prevalence of primary, secondary and total enuresis was 15.4, 2.7 and 18.1 per cent respectively in 5-15 year old children. Of these, 88.5 per cent had nocturnal enuresis, 0.6 per cent had diurnal enuresis, 10.6 per cent had diurnal and nocturnal enuresis.

Risk factors which significantly correlated with enuresis were the history of bed-wetting in the parents / sibling and inconsistent toilet training. We found that enuresis was not related to sex, birth order, LBW, socioeconomic, marital and parental educational status. Fifty-eight per cent of the parents thought that the enuretic problem needed further treatment.

Key word : Enuresis, Genetic, Toilet Training

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Children void urine automatically since birth because they do not have the necessary physiological maturity, the understanding to know what is required of them, or the motivation to achieve continence. By the second and third year of life, they usually learn to control themselves because of maturity of the central nervous system and toilet-training by their parents[1-3]. Reference from the fourth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), enuresis is defined as the re-

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peated voiding of urine into clothes or bed, whether the voiding is voluntary or intentional. The behavior must occur twice weekly for at least 3 months or must cause clinically significant distress or impairment socially or academically. Chronological age or developmental age must be at least 5 years and the behavior is not due to the direct physiological effect of substance or a general medical condition (eg. diabetes, spina bifida, seizure disorder)(4).

The objectives of this study were to study the epidemiology and risk factors associated with enuresis in Thai children, 5-15 years old.

MATERIAL AND METHOD

The study was approved by the Ethics Committee of the institute. From July to December 1998, one thousand children, 5-15 years of age were included in this study from the out patient unit at Queen Sirikit National Institute of Child Health. After explanation of the nature of the study, the parents accepted all the conditions and completed the questionnaire. After history-taking, physical examination and urine examination, the study population was divided into three groups.

Group 1 : 179 enuretic patients, which met the diagnostic criteria of enuresis from DSM-IV.

Group 2 : 811 non-enuretic patients.

Group 3 : 10 patients, which met the exclusion criteria.

Statistical analysis

The prevalence and 95 per cent interval were calculated by using Epiinfoversion in computer. The information in group 1 and 2 was compared by using chi-square analysis, a p-value of < 0.05 was considered significant. Results were presented as descriptive data.

Exclusion criteria

1. Medical illness : diabetes, spina bifida, urinary tract infection, etc.
2. Neurological problems : convulsive disorder, mental retardation, etc.
3. Drugs : diuretic, etc.

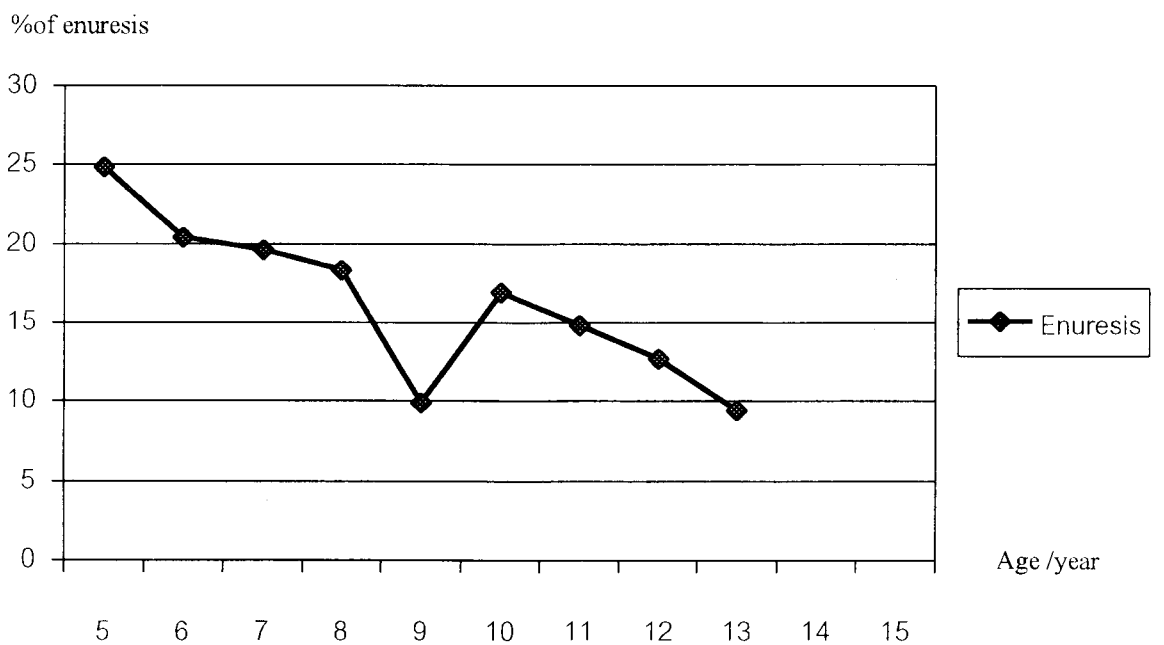

Fig. 1. Prevalence of enuresis.

RESULTS

Geographic data in the enuretic group (group I) and non-enuretic (group II), 990 cases demonstrated that 58.9 per cent lived in Bangkok, 53.0 per cent were male and 21.2 per cent were five year old children.

We found 152 cases of primary enuresis or 15.3 per cent, 27 cases of secondary enuresis or 2.73 per cent, total 18.08 per cent respectively in 5-15 years old. Of them, 88.8 per cent had nocturnal, 0.6 per cent had diurnal, 10.6 per cent had diurnal and nocturnal enuresis.

Fig. 1 shows the rate of enuresis decreased as the children got older. The peak age of enuresis was five years old.

Enuresis was not significantly related to sex, birth order, birth weight, socioeconomic, marital and parental educational status. Fig. 2 shows the age at onset of toilet training in group I and II. Although, group II - non enuretic pateints had early training in the first three years of life compared with group I - enuretic patients.

History of bed-wetting in parents or sibs increased significantly in group I (Fig. 3).

Most of the parents in both groups used multiple techniques in toilet training, including modeling, shaping, fading, rigid approach, positive reinforcement or punishment. But group II, 556 parents (80.8%) reported that they trained consistency while 85 parents (51.2%) from group I reported the same. (p = 0.000)

DISCUSSION

According to the DSM-IV, enuresis was diagnosed 18.1 per cent in 5-15 year-old children at OPD of Queen Sirikit National Institute of Child Health, Bangkok. Prevalence rates vary around 15-20 per cent in western countries, however, on the basis of the population studied and the tolerance for the symptoms in various cultures and socioeconomic groups. Enuresis was found to be one of the most common developmental problems[4-10].

There are two common methods to classify enuresis. The first method is based on relationship to sleep. Nocturnal enuresis occurs only while sleeping, where as diurnal enuresis occurs when the child is awake[7]. We found nocturnal, diurnal and nocturnal & diurnal enuresis 88.8, 0.6 and 10.6 per cent res-

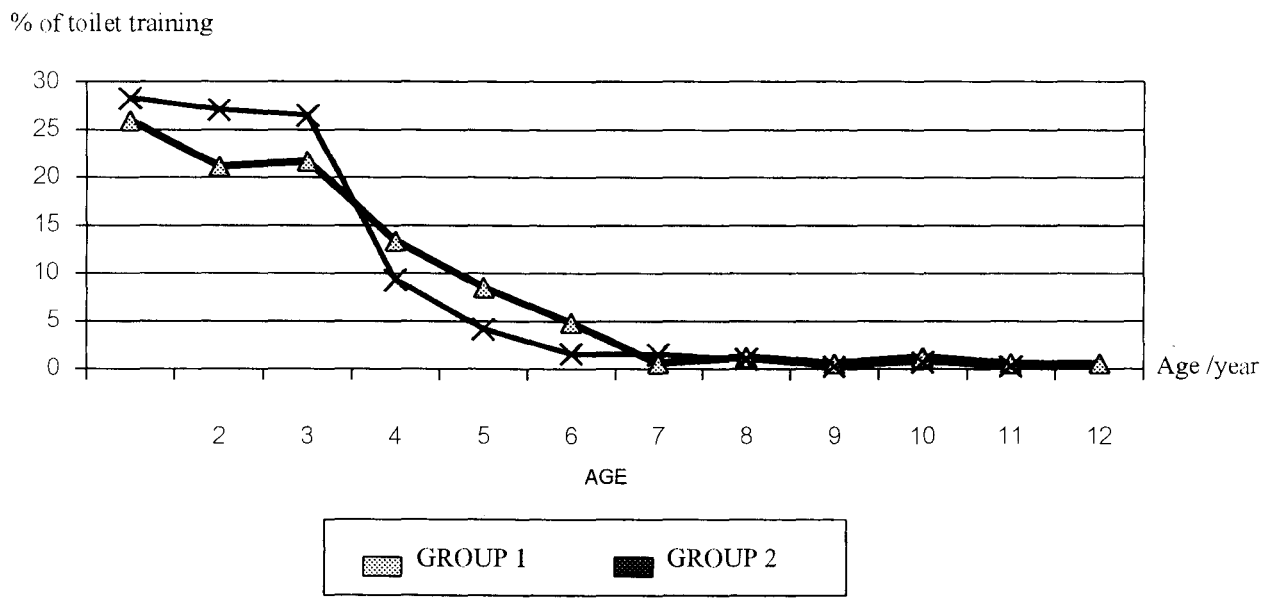

Fig. 2. Age onset of toilet training.

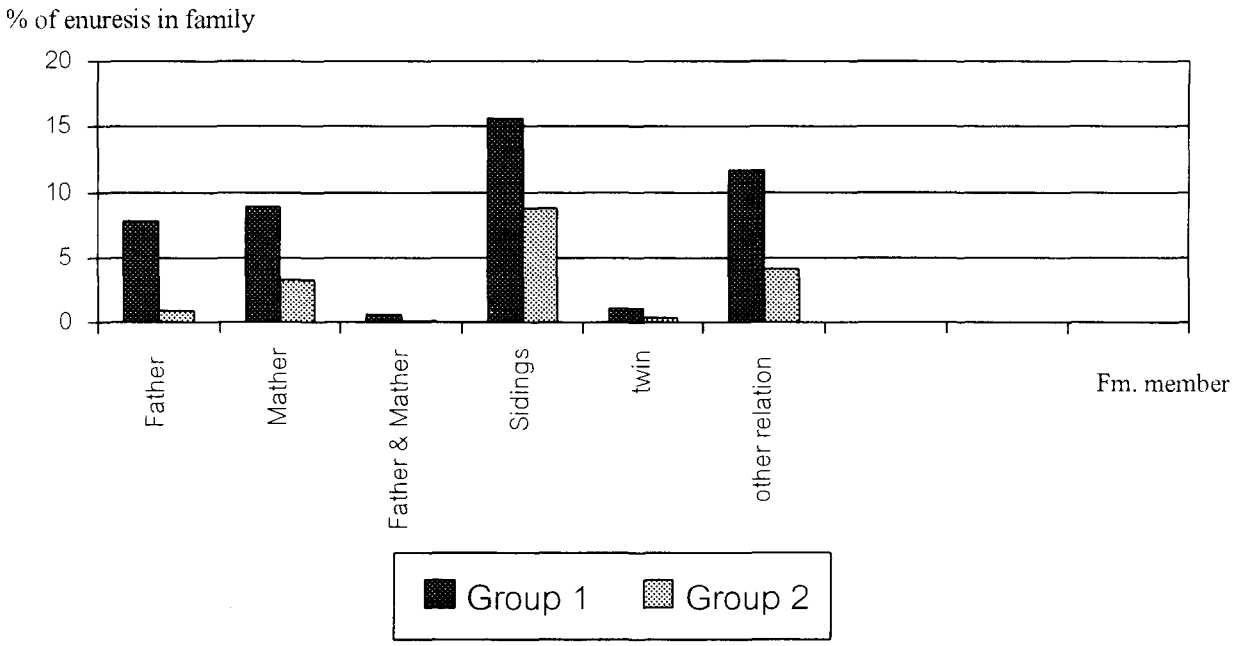

Fig. 3. Percentage of enuresis in family member.

Table 1. Nature of training.

Toilet training	Group 1		Group 2	
	N = 166	%	N = 688	%
Consisency	85	51.2	556	80.8
Inconsistency	81	48.8	152	19.2

pectively in this study, which is no different from other reports[10,11]. The second method of classifying enuresis is into primary enuresis when the child has never been consistently dry, whereas the child with secondary enuresis has had at least 6 months of consecutive dryness. The prevalence of primary enuresis in this study was 15.4 per cent from a total of 991 children which is no different from other reports[1,10-12].

From reports from Western countries, boys outnumber girls by a ratio of 1.4:1 while our report shows 1:1. Enuresis is not a disease[10,11,15-17]. It is, rather, a symptom that may have multiple etiologic factors. Some of the more well-established factors are genetics[17,18], psychological and social factors [18-24], sleep state[15-23], large urine volume, small bladder capacity[14,17], prematurity and constipation[11,21]. We compared many factors between enuretic and non-enuretic groups to find the risk factors of these problems. Enuresis significantly correlated with a history of bed-wetting in parents or siblings and the consistence of toilet training. Enuresis was not related to sex, birth order, low birth weight, socioeconomic, marital and parental educational status.

Children from lower socioeconomic circumstances, broken or stressed homes and institu-

tions are more likely to have problems with enuresis. This is particularly true for secondary enuresis which may have this symptom following psychic trauma[25-27]. Our findings, however, did not support this hypothesis.

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ปัสสาวะรดที่นอนในเด็ก 5–15 ปี ที่สถาบันสุขภาพเด็กแห่งชาติมหาราชินี

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ได้ทำการศึกษาเด็กวัย 5–15 ปีที่มารับการตรวจโรคที่สถาบันสุขภาพเด็กแห่งชาติมหาราชินี ช่วงเดือนกรกฎาคม ถึงเดือนธันวาคม 2540 จำนวน 990 ราย พบภาวะปัสสาวะรดที่นอนร้อยละ 18.1 แบ่งปัญหาปัสสาวะรดที่นอนออกเป็น primary และ secondary ร้อยละ 15.4 และ 2.7 ตามลำดับ ในกลุ่มที่มีปัสสาวะรดที่นอนจะเกิดในช่วงเวลากลางคืนร้อยละ 88.5 เกิดอาการในช่วงเวลากลางวันร้อยละ 0.6 และมีอาการทั้งกลางวัน – กลางคืนร้อยละ 10.6 จากการเปรียบเทียบพบว่ากลุ่มที่มีปัสสาวะรดที่นอนจะมีความสัมพันธ์กับประวัติปัสสาวะรดที่นอนของบุคคลในครอบครัวสายตรงและความไม่สม่ำเสมอในการฝึกการขับถ่าย แต่ไม่พบว่ามีความสัมพันธ์กับเพศ ลำดับบุตร น้ำหนักตัวน้อยเมื่อแรกเกิด เศรษฐานะ สถานภาพครอบครัว และระดับการศึกษาของผู้ปกครอง ร้อยละ 85 ที่ผู้ปกครองต้องการความช่วยเหลือจากบุคลากรทางการแพทย์

คำสำคัญ : ปัสสาวะรดที่นอน, กรรมพันธุ์, การฝึกการขับถ่าย

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