

## Study of Nocturnal Enuresis in Children of North Karnataka Population

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### Abstract

50 children (30 males and 20 females) aged between 6 to 10 years suffering from nocturnal enuresis were studied. Clinical manifestation were 8 (16%) had frequency of micturation, 9 (18%) had urgency of micturation, 9 (18%) had twice or thrice in a week bed wetting 11 (22%) had daily bed wetting 5(10%) had pain while passing urine 4 (8%) had abdominal straining during micturation, 6 (12%) had bed wetting only in specific situation. Co-morbidities in nocturnal enuresis children were, 4 (8%) had constipation/soiling, 7 (14%) had poor attention in school, 3 (6%) had learning difficulty, 5 (10%) had complexity behavior 6 (12%) had UTI 4 (8%) had over activity of detrusor muscle 3 (6%) had neurogenic bladder 2 (4%) had congenital anomalies. Comparison of efficacy of pharmacological and non pharmacological trials and results shown that, dry bed training 60% response and 40% relapse In alarm 55% had response and 10-45% had relapse. In the motivation therapy. 20% had response and 3% had relapse, In the treatment of Desmopressin response was 50-55% and 40-45% was relapse. In Imiprine administration, 30-50% was response, and 70-90% was relapse In oxybutyryns 35.60% response trial and result and 40% was relapse. This practical study to treat the nocturnal enuresis will be quite useful for pediatrician, psychiatrist and urologist to evaluate the etiology and treat the patients efficiently.

**Keywords:** Nocturnal; Emotional; Behavior; Pharmacologic; Bed Wetting.

### Introduction

Nocturnal enuresis is an emotional and social problem in school going children nocturnal enuresis is the involuntary loss of urine at night in absence of physical disease at an age when a child could reasonably be expected to be dry [1]. It has been also defined as repeated voiding of urine into clothes on had at least twice a week for at least 3 consecutive months in a child who is at least 5 years of age children who never achieved consistent night time dryness are called suffering from primary Enuresis. (PNE) children who had dry bed since last six months and recently developed bed wetting is referred as secondary natural enuresis (SNE) [2]. Nocturnal enuresis can cause a feeling of a failure and result in chronic stress it impacts the emotional

state, self – esteem as well as social development of a child. The fear of being detected by peers at school can cause stress. Children with nocturnal enuresis have lower self esteem, mental health, skills and poorer relations to their parents and others. Importantly after treatment for nocturnal enuresis children who became completely dry have higher self esteem than those with persistent nocturnal Enuresis [3]. Affected children may be at an increased risk of physical and emotional abuse from family members Hence attempt was made to study the different causes of nocturnal enuresis and tried to treat with sympathetically and pharmacology because nocturnal enuresis is mainly an emotional disorder apart from UTI, attention deficit, hyperactivity disorder (ADHD), constipation, caffeine, food allergies, and improper toilet training etc. [4].

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### Material and method

50 children (30 males and 20 females) aged between 6 to 10 years, regularly visiting to pediatric department of K.B.N Institute of Medical sciences kalaburgi – 585105 Karnataka having the problems of nocturnal enuresis were selected for study. Their blood investigation and radiological

examination was ruled out to diagnose the etiology of the disease moreover detail history of each child was noted and classified them according to their co-morbidities, and symptoms, treated them and compared the present treatment with previous studies.

The mentally retarded and HIV infected children were excluded from the study.

The duration of the study was about four years (2014 to 2018).

### Observation and Results

Table 1 symptoms of the nocturnal Enuresis – 8 (16%) had frequency of urine 9 (18%) had urgency of urine, 7 (14%) had had wetting (twice or thrice) weekly 11 (22%) had daily bed wetting, 5 (10%) had pain while passing, 4 (8%) had abdominal straining 6 (12%) had bed wetting only in specific situation

Table 2 Co-morbidities of nocturnal enuresis 4 (8%) had constipation / or soiling, 7 (14%) had poor attention 3 (6%) had learning difficulty 5 (10%) had complex behavior, 6 (12%) had emotional disorder, 2 (4%) had diabetic mellitus, 8 (16%) had disturbed family, 6 (12%) had U.T.I 4 (8%) had detrusor over activity, 3 (6%) had neurogenic bladder 2 (4%) had congital anomalies,

Table3 Comparison of efficacy of pharmacological and non-pharmacological trials and results for treatments of nocturnal enuresis in dry bed training response rate was got and relapse rate was 40% alarm system. Response was 55% and relapse was 10-45% motivation therapy response was 20% and relapse was 3% treatment of Desmopressin response rate was 50-55% and relapse rate was 40-45% administration of Imipramine had 30-50% response and 70-90% had relapse. Administration of oxybutynin response rate was 35-60% and relapse rate was 40%

**Table 1:** clinical manifestation of the nocturnal enuresis

SI No	Symptoms	Number	Percentage
1	Frequency	8	16
2	Urgency	9	18
3	Weekly (twice or thrice)	7	14
4	Daily bed wetting	11	22
5	Pain while passing	5	10
6	Abdominal straining	4	8
7	Specific situation	6	12

**Table 2:** Co-morbidities of nocturnal Enuresis

SI no	Particulars	No of patients	Percentage
1	Constipation/soiling	4	8
2	Poor Attention	7	14
3	Learning difficulty	3	6
4	Complex Behavior	5	10
5	Emotional disorder	6	12
6	Diabetes mellitus	2	4
7	Disturbed family	8	16
8	UTI (urinary tract infection)	6	12
9	Detrusor over activity	4	8
10	Neurogenic bladder	3	6
11	Congenital anomalies	2	4

**Table 3:** Comparison of efficacy of non pharmacological and pharmacological trials and results for treatment of nocturnal enuresis

Therapy	Response rate (percentage)	Relapse rate (percentage)
Dry bed training	60	40
Alarm	55	10-45
Motivation therapy	20	3
Desmopressin	50-55	40-45
Imipramine	30-50	70-90
Oxybutanin	35-60	40

**Table 4:** Comparative clinical trials with desmopressin in previous studies

Authors and year	Study design	Treatment	Results
Skoog 1997	Double blind placebo controlled	Oral desmopressin 0.2, 0.4 0.6 mg or placebo bed time	Desmopressin 0.6mg significant reduced wet night < 50% decreased in wet nights was observed in 83% 79% and 64% patients recurring placebo and 0.2, 0.4, 0.6. Desmopressin responded
Schmon (2001)	Double-blind placebo controlled	Phase -1 one dose 2 weeks phase-II placebo wash out for 2 week followed by dose titration for 8 week	Significant reduced wet nights compared to placebo - 44% 2 weeks with doses 0.2 and 0.4 mg mild to moderate side effect
Present study	Double bind placebo controlled	Oral desmo pressin 0.3, 0.4, 0.6 or placebo	< 45 decreased in wet night was observed 80% 75% 65% Patients receiving placebo and 0.3m/ 0.4m/ 0.6/ 1m/ desmopressin respectively

Table 4 Comparative clinical trials of Decompression with previous studies.

### Discussion

Present study of nocturnal enuresis in children aged between 6 to 10 years of north Karnataka. The clinical manifestation were 8 (16%) had frequency of micturation, 9 (18%) had urgency of nitration, 7 (14) children had bed wetting (twice or thrice) weekly, 11 (22%) had daily bed-wetting, 5 (10%) had pain while passing urine, 4 (8%) had abdominal straining during micturation,, 6 (12%) had bedwetting only in specific situations. (Table 1) co-morbidities of nocturnal enuresis in children were 4 (8%) had constipation or soiling, 7 (14%) had poor attention in school, 3 (6%) had learning difficulty, 5 (10%) had complex behavior, 6 (12%) had emotional disorder 2 (4%) had D.M 8 (16%) had disturbed family, 6 (12%) had UTI, 4 (8%) had over activity of detruser muscle. 3 (6%) had neurogenic bladder, 2 (4%) had congenital anomalies (Table 2) In the comparison of non-pharmacological and pharmacological trials and results in nocturnal enuresis in children. In dry bed training 60% responded and 40% had relapse. In alarm 55% responded 10-45% had relapse in motivation therapy 20% responded and 3% had relapse. In the administration of Desmopressin 50-55% responded and 40-45% had relapse in Imiprine administration 30-50% responded 70-90% had elapse In oxybutyrins administration 35-60% responded and 40% had relapse (Table 3) moreover there was a clinical trials of Desmopressin and compared with previous studies had significant response (Table 4). These studied values were more or less in agreement with previous studies [5,6,7]. UTI, neurogenic. DM cause transient urethral obstruction, incomplete voiding spontaneous

bladder contraction and increased urination at night can be confused with nocturnal enuresis [8]. Moreover it is to differentiate primary enuresis (PNE) from secondary enuresis or day time incontinence with a nocturnal in children [9]. Congenital anomalies included ectopic ureter, un-ascended kidney, horse shoe shape kidney. UTI is detected through urine analysis and urine culture secondary enuresis can be identified by testing for elevated serum glucose, blood urea nitrogen and creatinine levels and low thyroid stimulating hormone levels. In the over activity of detruser, uro-dynamic study is required. Complex and emotional behavior in children includes bruxism, nail biting, thumb sucking, speech defects, poor attention, learning difficulty. Such abnormalities mainly associated with disturbed family. Western studies have reported that nocturnal enuresis is hereditary factors in 50% of children [10]. Apart from the disturbed family, parents attitude of anger, punishment or rejection will also result into PNE. It can be also hypothesized that, nutritional status during pregnancy aggravate the chromosomal aberration of fetus, because genetic factors predominantly responsible for PNE or secondary nocturnal enuresis. Because childhood complex attitude and emotional disorders children will blast as schizophrenic when they attain the age of adult (18 to 20 years).

### Summary and Conclusion

The present study of nocturnal enuresis in the children aged between 6-10 years have patho physiological and psychological factors which is quite useful to pediatrician, psychiatrist and urologist to rule out the exact cause. Although Nocturnal enuresis is an Idiopathic disease it warrants further study of genetic, nutritional,

psycho-therapy, hormonal and neurological study because little is known about exact formation, tolerance, quantum and voiding of urine.

This research paper was approved by ethical committee of KBN Institute of medical sciences and hospital kalaburgi – 585105 Karnataka

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