

# The management of nocturnal enuresis in children

Dr Marthese GALEA, Dr Christopher SCIBERRAS, Mr Keith GALEA

## ABSTRACT

### Introduction

Nocturnal enuresis is more prevalent in the male gender. Studies such as that by Butler & McKenna (2002) show how nocturnal enuresis is hereditary, with approximately 50% of the children affected if one parent has suffered from it. The main cause for nocturnal enuresis can be drinking late in the evening or not passing urine before going to sleep, resulting in excessive urine volume. A detailed history needs to be taken, eating and drinking habits should also be assessed, and any drinks or food that can increase the chances of bedwetting should be removed or reduced.

### Management

Management has to be adapted to the child and his/her family requirements. Prescribing the right medication and ensuring compliance is important but is only part of the management plan. Lifestyle changes should be advised. A very simple bedwetting vibrating alarm can be considered. If symptoms persist, pharmacological treatment should be prescribed together with the bedwetting alarm.

### Conclusion

Nocturnal enuresis is a common condition in a young child, however it requires a careful assessment and management in cooperation with the child's parent or carer. Physicians need to be aware of when the child needs to be referred.

### Keywords

Nocturnal enuresis, bedwetting, bedwetting alarm.

## INTRODUCTION

Butler & Heron (2008) stated that nocturnal enuresis is the involuntary wetting of the bed while sleeping by children that have no inherited or acquired defects of the central nervous system. If left untreated nocturnal

enuresis can result in psychological behavioural problems.

According to the NICE clinical guideline (2010) nocturnal enuresis can be classified in two, namely primary or secondary enuresis. Children above the age of 5 years who never had bladder control are diagnosed as having primary nocturnal enuresis. Children who are potty trained and for six months had no bedwetting episodes are diagnosed with secondary nocturnal enuresis if the child starts wetting the bed again.

Nocturnal enuresis is more prevalent in the male gender. Studies such as that by Butler & McKenna (2002) show how nocturnal enuresis is hereditary with approximately 50% of the children being affected if one parent has suffered from it.

The main cause for nocturnal enuresis can be drinking late in the evening or not passing urine before going to sleep resulting in excessive urine volume. Another cause may be a low amount of antidiuretic hormone during the night which controls the production of urine.

The aim of this article is to review the assessment and management of this condition.

## METHODS OF ASSESSMENT

For an accurate diagnosis a good history and examination needs to be carried out and a fluid balance chart used. An ultrasound of the bladder can also be an option.

A detailed history needs to be taken, including if the child is currently on any medications and if he or she used any medication for nocturnal enuresis. Eating and drinking habits should also be assessed, and any drinks or food that can increase the chances of bedwetting should be removed or reduced.

The pattern of when the child wets the bed is important. It is also important to identify causes and / or emotional triggers and the volume of urine passed also needs to be measured.

Identifying important symptoms such as daytime symptoms and frequency of passing urine also need to be

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considered. Consider the frequency of going to the toilet. More than seven times a day is considered too frequent while less than four times a day is infrequent. Check for symptoms such as urgency, daytime wetting or dysuria. The pattern of enuresis in different settings, such as in school, should also be taken into account.

## MANAGEMENT

Management has to be adapted to the child and his/her family requirements. Parents should have a positive approach when dealing with a child suffering from nocturnal enuresis. The physician needs to tell the carers that the child has no control over the condition, therefore punishing the child should not be considered. This approach can also reduce the psychological impact on the child according to NICE (2010). Wetting the bed is common under the age of 5 (21%) and if during the day there are no symptoms, there is no need to alarm the parents according to Butler & Heron (2008).

In children over the age of 5 years the physician should try to reduce bedwetting episodes and try to ease the psychological impact that nocturnal enuresis can have on the child.

Prescribing the right medication and ensuring compliance is important but is only part of the management plan. Behavioural changes are also needed, such as ensuring the right daily fluid intake, and passing urine before the child goes to bed.

The treatment for nocturnal enuresis is continuous and can take years; therefore the physician should make this clear with the carers of the child. This information should reduce the pressure on the child.

Lifestyle changes should be advised. The child's bed should be placed close to a toilet so he/she has easy access. One should also encourage diet change, going to the toilet before sleeping and using mattress protection that can be easily washed.

Following a pre-set time frame agreed with the parents, if lifestyle changes have not worked a very simple bedwetting vibrating alarm that has a very small sensor inserted in the child's underwear should be recommended as these have a very good success history (Wang *et al.*, 2009). A bedwetting alarm can help the child identify a bladder that is full resulting in the child waking up to pass urine.

A review is suggested after around 6 weeks of alarm use. Improvement can be characterized by having smaller patches, reduction in the number of alarm episodes during the night and the occurrence of alarm

episodes later on at night. Once there are 15 days of no bedwetting episodes the alarm can be stopped.

If after three months bedwetting has not stopped, parents can be given the choice to continue and reassess after another 3 months or start pharmacological treatment for 4 weeks if the child is over 5 years of age. Ideally the pharmacological treatment should be prescribed together with the bedwetting alarm and obviously lifestyle changes.

Desmopressin can be useful to reduce bedwetting episodes since it reduces production of night-time urine. Desmopressin can improve confidence and long-term use is considered relatively safe (Evans *et al.*, 2011). According to NICE (2010), anticholinergic medications can also be useful and are often recommended as second line treatment. The most commonly used tricyclic antidepressant is imipramine, but this class of drugs are less used due to a higher incidence of side-effects.

After 4 weeks of taking the medication a review should be done. If found effective the treatment should be continued for 3 months, after which it should be stopped for a week to check if the child still has nocturnal enuresis without the medication. The medication should be prescribed for another 3 months if bedwetting has not stopped (NICE, 2010).

In a study done by Monda and Husmann (1995) where patients were put either under observation, or treated with imipramine, desmopressin acetate or alarm therapy it was concluded that only the enuresis alarm proved constant effectiveness.

Physicians need to be aware of when the child needs to be referred. As stated in NICE (2010) if the child presents with symptoms such as severe daytime symptoms, if there is suspicion of physical, neurological or emotional problems, learning or developmental problems or suspicion of comorbidities the child needs to be referred to a specialist. Caldwell *et al.* (2013) suggest that consideration should also be given to refer a child should symptoms persist after 6 months of treatment without success.

Referral should also be considered if there is a suspicion of child abuse. Williams *et al.* (1996) concluded that bullying which is a means of child abuse can result in bedwetting. If a child suffers from recurrent urinary tract infections he or she should also be referred as according to Helstrom *et al.* (1996) there is a strong relation between urinary tract infection and abnormal bladder function.

## CONCLUSION

It is important to keep in mind that, while nocturnal enuresis is a common condition in a young child, it requires a careful assessment and management in cooperation with the child's parent or carer.

Behavioural changes are important, as giving the right medication is only part of the treatment. The physician should try to keep the pressure off the child by explaining to the parents that this is a long term process and that the child has no control over it.

A bedwetting vibrating alarm for 3 months can be introduced before pharmacological treatment. After the 3 months adding desmopressin together with the bedwetting alarm can be useful. Referring the child should also be considered if the symptoms persist, or if one suspects co-morbidities.

### Dr Marthese GALEA

MD, MRCPCH

Resident Specialist, Paediatrics Department, Mater Dei Hospital, Msida, Malta

Email: akgalea@maltanet.net

### Dr Christopher SCIBERRAS

MD, MRCPCH, MRCP(UK), MSc. Comm.Paeds (Warwick),  
DCH (Dublin), Cert. Dev. Paeds.(London)

Consultant Paediatrician, Community Paediatrics and Disability Services, Department of Paediatrics, Mater Dei Hospital, Msida, Malta

### Mr Keith GALEA

B.Pharm. (Hons), MBA Leic. (UK)

Pharmacist

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