

Acupuncture Treatment of Persistent Primary Nocturnal Enuresis: A Follow-Up Study

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Abstract

Background: Primary nocturnal enuresis (PNE) refers to an involuntary loss of urine during sleep in patients who have never achieved a sustained period of dryness. The natural history of primary nocturnal enuresis (PNE), commonly known as bedwetting, typically involves a gradual improvement over time. Studies have shown that the condition resolves spontaneously at a rate of approximately 15% each year as the child grows. However, about 1% of individuals may continue to experience PNE into adulthood. This spontaneous resolution is thought to be due to the maturation of the nervous system, increased bladder capacity, and the development of better bladder control during sleep. Although there is a high rate of spontaneous remission of PNE, the social, emotional and psychological costs can be great, particularly among school children. Acupuncture is believed to normalize bladder function by invigorating the kidney, spleen and brain, calming the mind, vital energy, blood and increase functional bladder capacity.

Aims and Objectives: The study aims to assess the response to acupuncture treatment in patients who showed no response to behavioral and pharmacological therapy.

Patients and Methods: This study included 50 children and adolescents with persistent primary nocturnal enuresis who attended the Pediatrics and Urology Outpatient Clinics in Zagazig University Hospitals, Egypt who failed to improve with the behavioral and pharmacological therapy. Fifty patients were divided into two groups: one group of 25 patients received acupuncture treatment, while the other group of 25 received placebo acupuncture.

Results: Patients who received placebo acupuncture showed no response. Among the (25) patients who received acupuncture, 84 % (21/25) showed a complete response, 8 % (2/25) showed a partial response, and 8% (2/25) showed no response (after completing 2 courses of acupuncture).

Conclusion: Traditional Chinese acupuncture is a viable alternative for treating patients with persistent PNE. It has a high success rate, a low relapse rate, and is more safer than pharmacological therapy with no side effects.

Keywords: Enuresis; Acupuncture; PNE; Moxibustion

Abbreviations

PNE: Primary Nocturnal Enuresis; OLPs: Opioid-Like Peptides; SNE: Secondary Nocturnal Enuresis

Introduction

Primary nocturnal enuresis (PNE) is a common disorder: Epidemiological studies report that 15 - 20% of 5-year-old, 5% of 10-year-old and 2 - 3% of all adolescents wet the bed at least once per month [1]. Although enuresis has a spontaneous resolution rate of 15% per year and most children outgrow the condition [2], bedwetting causes significant psychosocial stress, especially as children grow older [3].

The treatment of PNE can be divided into behavioral and pharmacological therapy, the latter involving the use of various medications such as desmopressin, tricyclic antidepressants (Tofranil) or oxybutynin [4]. Traditional Chinese medicine (TCM) claims that acupuncture induces a decrease in the number of wet episodes by 76% to 98% [5], improves bladder storage capacity, and enhances arousal from sleep in order to void [6]. Meanwhile Experimental research has shown that acupuncture induces the formation of opioid-like peptides (OLPs) in animals [7], which may lead to decreased sensorial afferent impulses in the cerebrospinal fluid and to an increase in functional bladder capacity [8].

Materials and Methods

This study included 50 children and adolescents with persistent primary nocturnal enuresis who attended the Pediatrics and Urology Outpatient Clinics in Zagazig University Hospitals.

Inclusion criteria

Patients had documented persistent PNE and had not experienced success with pharmacological treatments (desmopressin, imipramine, or oxybutynin) or combined pharmacotherapy with behavioral therapy.

Exclusion criteria

Children with SNE e.g. urinary tract infection, psychiatric disorders, diabetes mellitus, diabetes insipidus, obstructive sleep apnea, neuro-urological disorders.

Patients suffering persistent PNE were divided into 2 groups:

- Group I: Twenty-five patients received acupuncture and moxibustion.
- Group II: Twenty-five patients considered as a control group who received placebo acupuncture.

The treatment involved the use of disposable acupuncture needles in 10 sessions, conducted on alternate days over the course of 3 months. Each therapy session lasted between 25 and 30 minutes. Patients who did not respond or relapsed received another 3-month course, followed by a follow-up. Patients who responded were followed up every 15 days for one month then every one month for 3 months.

Results and Discussion

Initial response to acupuncture after 3 months among 25 patients (who received acupuncture and moxibustion) versus 25 control patients (who received placebo acupuncture) (Table 1).

Response, No and %	Patients N = 25	Control N = 25	χ^2	P values and significance
Complete response after 3 months acupuncture	16 (64%)	-	45.83	< 0.001 HS
Partial response after 3 months	7 (28%)	-	15.30	< 0.01 S
No response after 3 months of acupuncture	2 (8%)	25 (100%)	42.33	<0.001 HS

Table 1

Nine patients who relapsed or partially responded or did not respond to the first course of acupuncture, received a second 3-month course of acupuncture (Table 2).

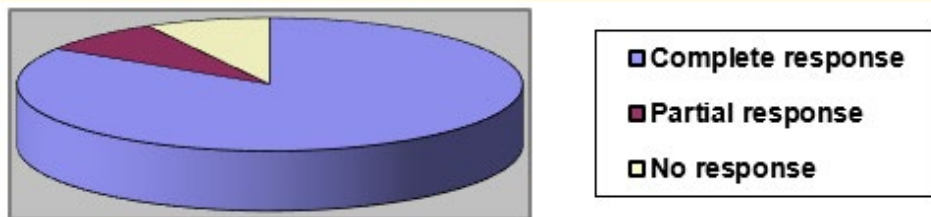
Response, No and %	No	%
Complete response	5	55.6%
Partial response	2	8%
No response	2	8%

Table 2

Finally, among the (25) patients who received acupuncture, 84% (21/25) showed a complete response, 8% (2/25) showed a partial response and 8% (2/25) showed no response (after completing the 2 courses of acupuncture) (Table 3).

Response, No and %	No	%
Complete response	21	84%
Partial response	2	8%
No response	2	8%

Table 3



Figure

Discussion

Longitudinal studies on the natural history of enuresis are no longer possible since it could be considered unethical not to treat enuretic children. Previous studies have confirmed the common knowledge that most enuretic children eventually obtain normal control [9].

Pharmacological therapy is directed towards alleviating the symptoms of PNE rather than curing the condition because the exact pathophysiological mechanisms involved are unclear. Anticholinergics have been used in the treatment of PNE and oxybutynin has been shown to increase FBC. However placebo-controlled double-blind studies showed that there was no significant advantage of oxybutynin or placebo in the treatment of PNE [4]. In addition, oxybutynin chloride has a relatively short half-life (< 4 hours) and so may not be effective in treating PNE because most enuretic patients sleep for > 8 hours, during the night [10].

Traditional Chinese medicine claims that Chinese acupuncture induce a decrease in the number of wet episodes (by 76% to 98%). It also, improves bladder storage capacity, and enhance arousal from sleep in order to void [4]. A reduction in uninhibited bladder contractions has also been reported following acupuncture [11].

Similar results were obtained in other studies. For instance, [12] treated 43 cases with PNE, with 2 courses of therapeutic acupuncture, achieving complete cure in 65% of patients (28/43) and a partial cure in 30.3% (13/43) and no response in 4.6% (2/43). Meanwhile, [13] treated 100 cases with PNE, with 92% cure, 6% remarkable effect and 2% failure.

Conclusion

Primary nocturnal enuresis (PNE) persisting in the preadolescent and adolescent periods can be distressing for both patients and their parents. Effective treatment is especially important during these stages. Traditional Chinese acupuncture is a viable alternative for treating patients with persistent PNE. It has a high success rate, a low relapse rate, and is safer with no side effects.

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Conflict of Interest

There was no conflict of interest.

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