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A CLINICAL STUDY ON THE EFFECT OF BRAHMI VATI IN THE MANAGEMENT OF SHAYYAMUTRA (ENURESIS)

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ABSTRACT

Background: Bedwetting or enuresis is one of the most common and obstinate behavioural problems, which is familiar to almost all the parents up to certain age of early life of their children. But it becomes a nuisance to the children as well as parents if it persists beyond the age at which bladder control is expected. It affects all races and children from all geographical areas. It's significantly affecting self-esteem and instils guilt and shame in children. In modern medical science, antidepressants, anticholinergics, behavioural modification and conditioning therapy are prescribed but incidences of frequent recurrence are noted. So, it is the need of time to search for an active treatment at the earliest. Classics mention the use of *Medhya* drugs for *Mana* and *Manasika Bhavas* related problems. At the same time, Yogaratnakara has given the single-drug therapy (*Bimbimoola* - Root of *Coccinia Indica*) for this disease. Aim and Objective: *Medhya* drug *Brahmi* (*Bacopa Monnieri* Linn) and *Bimbimoola* were selected, to assess the efficacy and for the comparison in the management of *Shayyamutra*. Material and method: 25 patients having complaints of persistent bedwetting at least two to thrice times per week were randomly divided into two groups, A and B consisting of 13 and 12 patients respectively. Group A patients were given *Brahmi* tablets and Group B was given *Bimbimoola* tablets in divided doses as per age for six weeks. Result: *Brahmi* tablets showed encouraging results on cardinal as well as on associated complaints. Conclusion: The study shows that *Brahmi* (Bacopa), is found as an effective drug in the management of enuresis.

Keywords: Shayyamutra, Enuresis, Medhya drug, Manasika Bhavas, Brahmi

INTRODUCTION

Children in the modern age suffer at large due to physical problems; in addition to that, they suffer from the psychological problem too. Often this is because their parents are too busy and cannot afford much time to look after them. As a result of that children lack love from their parents which make them unhappy. Although they are too young to express it, they hold a negative impression inside, which affect their personalities. The events leave a lasting impression on the tender mind of children and later become the cause of behavioural or psychosomatic diseases. Among all behavioural problems, bedwetting is one of the commonest. The ancient scholars have described this obstinate health problem of children as Shayyamutra. 1 Children are most among the sufferers of bedwetting may because of starting of development of personality and ego since the age of 3 years² which culminates as negativism against parents when they force them to control the bladder. So, child psychology has a major role in the manifestation of enuresis. This seems very true with primary enuretic but secondary enuretic are mainly associated with psychological inflicts, which indicates the role of psychological inflicts in a reversal of infantile behaviour. Its impact on children and parents reveals by various studies throughout the world. In the United States, about 25% of enuretic children are punished for wetting the bed³ and in Hong Kong, the percentage is 57%. ⁴A European study estimated that a family with a child who wets nightly will pay about \$1,000 a year for additional laundry, extra sheets, disposable absorbent garments such as diapers, and mattress replacement⁵. In India, it remains a neglected problem.

The prevalence at age 5 years is 7% for males and 3% for females. At age 10, it is 3% for males and 2% for females and at age 18 years, it is 1% for males and extremely rare for females. General population studies carried out in India show that 2.5% in the age group of 0 to 10 years have enuresis. The prevalence of nocturnal enuresis has been difficult to estimate

because of variations in its definition and social standards.^{8,9}

Ayurveda explains the involvement of Mana in almost all diseases either before the manifestation of a disease or later as a consequence of disease. Contemporary science also accepts its role in the manifestation of many psychosomatic or behavioural diseases. The same principle was considered in the present study. As disease Shayyamutra manifests during sleep only and sleeps mainly caused by Klanta Mana, so involvement of Mana in its pathophysiology would have some definite role. All the Manasika Bhavas are governed by Sadhakapitta mainly, which is responsible for persons' Medha. So, emphasis was given to the treatment of Mana in the present study. Hence Brahmi, being a Medhya drug was selected for the present study.

Yogaratnakara has mentioned *Bimbimoola* as a remedy for this disease and hence it was kept as an Ayurveda control drug in this study.

Aim and Objectives

To compare and assess the efficacy of *Brahmi* and *Bimbimoola* in the management of *Shayyamutra*

Material and Methods

Study design: Randomized control trial

Source of Data: patients attending the OPD of Kaumarabhritya of ITRA, Jamnagar were selected for the study.

Selection Criteria:

Patties of age between 6 to 10 years, of either sex, with cardinal features of *Shayyamutra* without day-time incontinence and having a history of repeated voiding of urine in bed or clothes at least 2-3 times in a week were included in this study. A child who had normal urinalysis, negative stool report for *Krimi* and showed no abnormality on physical examination were included in the study.

Patients having systemic disorders like TB, DM; congenital anomalies; anatomical defects of the genito-urinary system and neurological disorders like Cerebral Palsy, MR, Spina bifida were excluded from the study.

Grouping of Patients:

Patients were randomly allotted into 2 groups viz. The simple random sampling method was adopted in the study.

Group A: Brahmi Tablet Treated.

Group B: Bimbimool Tablet Treated.

Posology: Doses of *Vati* were calculated according to the dose prescribed for *Brahmi Churna* in Database¹⁰ on medicinal plants i.e., 10 g maximum for adults and it was calculated for a child by adopting young's formula. Both drugs were given 3.5-6 g per day in 3 divided doses as per the age for 6 weeks.

Assessment criteria: A research proforma was prepared that comprised all the suitable *Ayurvedic* and modern parameters essential for the assessment of the condition of the patients. The suitable scoring pattern adopted in the previous research work¹¹ for cardinal symptom and the associated symptom was adopted, and an arbitrary scoring pattern was made for assessing the *Manasika Bhavas* mentioned in *Vimanasthna* based on *Anumana Pramana*, after and before treatment.

Scoring Pattern for Manas Bhavas:

Scoring for *Medha*, *Smriti*, *Dhriti*, *Vigyana*, *Priti*, *Sradha* and *Harsha* like positive emotions - not at all, to some extent, to a greater extent and considerable extent were given as 0, 1,2 and 3 respectively. For negative emotions like *Krodha*, *Moha*, *Shoka* and *Dainya* had given opposite sequence of the abovementioned score.

The results in overall effect of therapy were defined as:

Complete improvement : 100%
 Marked improvement : 76% to 99%
 Moderately Improvement : 51% to 75%

➤ Mild improvement : 26% to 50%➤ No improvement : Below 25%

RESULT:

Baseline Data:

Total 25 patients, 13 in Group A and 12 in Group B were registered. Out of 25, a total of 4 patients were dropped the treatment in between the study.

Maximum numbers of children i.e., 92% were Hindu and had a full-term normal delivery. 100% of children were immunized properly and had normal growth and development except night bladder control. 92% of children from Jangal Desha and 32% each had very good (80%) and excellent (>90%) academic performance. 56% had joint families, 80% were urban and 40% were from lower-middle socioeconomic status. with 36% of children of 10 years. females were 56% and had a history of Krimi (60%). 28% had a positive family history and 48% had no treatment history. 60% had irregular bowel habits and 100% had deep sleep. 64% had 8-9hrs sleep duration, 84% were vegetarian and Samshana dietary intake was found in 72% of the patients. Katu (56%) followed by Madhura and Amla in 36% and 32% respectively. 100% of children were of nocturnal enuresis, 88% were primary enuretic, and 76% had more than once daily night frequency. 36% had 6-8 times daytime urine frequency, overall age wise 24 hours urine frequency was found almost equal to the study of Gerrard. Monosymptomatic nocturnal enuresis was present in 52%. Irritability (64%), tension (52%) followed by anxiety were found in 44%. Sara, Samhana, Satva were Madhyama in most of the patients. Rasavaha Srotas involvement was found in 100% of children followed by Purishvaha (92%) and Swedavaha (72%). Vegavrodha were present in 56% of children .64% had Vata Pitta Sharirika Prakriti and 52% had Satvika Manas Prakriti.

Table 1: Effect of Group A and Group B on the cardinal symptom (Bedwetting)

Group	Mean score		X	%	S. D	S. E	't'	P
	B. T	A. T						
A: Brahmi Vati (N= 12)	5.58	1.75	3.83	68.65	1.74	0.50	7.5	< 0.001
B: Bimbimoola Vati (N=9)	5.77	4.33	1.44	25	0.72	0.24	5.96	< 0.001

Table 2: Effect of Brahmi Vati on associated symptoms in 12 patients

Symptoms	Mean so	core	X	%	S. D	S. E	't'	P
	B. T	A. T						
Lack of memory	1.33	1	0.33	25	0.49	0.14	2.34	< 0.05
Shamefulness	0.66	0.33	0.33	50	0.77	0.22	1.48	< 0.1
Irritability	1.25	0.58	0.66	53.33	0.65	0.18	3.54	< 0.01
Lack of concentration	1.25	0.83	0.41	33.33	0.51	0.14	2.80	< 0.02
Excessive activity	2.91	1.5	1.41	48.57	0.79	0.22	6.18	< 0.001
Fear	0.5	0.25	0.25	50	0.45	0.13	1.91	< 0.1

Table 3: Effect of Bimbimool Vati on associated symptoms in 9 patients

Symptoms	Mean score		X	%	S. D	S. E	't'	P
	B. T	A. T						
Lack of memory	0.55	0.44	0.11	20	0.33	0.11	1	< 0.1
Shamefulness	1	1	0	00	-	-	-	-
Irritability	1.14	0.85	0.28	25	0.48	0.18	1.54	< 0.1
Lack of concentration	1	1	0	00	-	-	-	-
Excessive activity	3	1.77	1.22	40.74	0.60	0.20	6.10	< 0.001
Fear	1	1	0	00	-	-	-	

Table 4: Effect of Brahmi Vati on Manasika Bhava in 12 patients

Symptoms	Mean sc	Mean score		%	S. D	S. E	't'	P
	B. T	A. T						
Medha	2	2.5	0.5	20	0.52	0.15	3.31	< 0.01
Smriti	1.83	2.58	0.75	29.03	0.75	0.21	3.34	< 0.01
Dhriti	1.58	2.25	0.66	29.62	0.77	0.22	2.96	< 0.02
Vigyan	1.33	2.08	0.75	36	0.45	0.13	5.74	< 0.001
Krodha	1.91	1	0.91	47.82	0.66	0.19	4.74	< 0.001
Moha	1	0.66	0.33	33.33	0.65	0.18	1.77	< 0.1
Shoka	0.75	0.33	0.41	55.55	0.66	0.19	2.15	< 0.05
Priti	1.66	2.41	0.75	31.03	0.62	0.17	4.17	< 0.01
Shradha	1.91	2.5	0.58	23.33	0.51	0.14	3.92	< 0.01
Harsha	2.33	2.83	0.5	17.64	0.67	0.19	2.56	< 0.05
Vishada	0.41	0.08	.33	80	0.65	0.18	1.77	<0.1

Table 5: Effect of Bimbimool Vati on Manasika Bhava in 9 patients

Symptoms	Mean sc	Mean score		%	S. D	S. E	't'	P
	B. T	A. T						
Medha	2.44	2.66	0.22	8.33	0.44	0.14	1.15	< 0.1
Smriti	2.44	2.66	0.22	8.33	0.44	0.14	1.15	< 0.1
Dhriti	2.11	2.33	0.22	9.52	0.44	0.14	1.15	< 0.1
Vigyan	2.33	2.55	0.22	8.69	0.44	0.14	1.15	< 0.1
Krodha	1.33	0.56	0.77	58.33	0.66	0.22	3.5	< 0.01
Moha	1	0.55	0.44	44.44	0.78	0.26	1.69	< 0.1
Shoka	1	0	1	100	-	-	-	-
Priti	2.11	2.66	0.55	20.83	0.72	0.24	2.29	< 0.02
Shradha	2.11	2.55	0.44	17.39	0.52	0.17	2.52	< 0.05
Harsha	2.33	2.88	0.55	19.23	0.52	0.17	3.16	< 0.01
Vishada	1	0	1	100	-	-	-	-

Table 6: Comparative effects of therapies on the cardinal symptom (bedwetting)

Bedwetting					P
No of patients					
Group	≥50%	< 50%	Total		
Group A	9	3	12	11.74	< 0.001
Group B	1	8	9		
Total	10	11	21		

Table 7: Overall effects of therapies on the cardinal symptom in 21 patients

Results	Group A		Group B	
	No of patients	%	No of patients	%
Complete remission (100%)	06	41.66	00	00
Marked improvement (76-99%)	01	8.33	00	00
Moderate improvement (51-75%)	00	00	01	11.11
Improvement (26-50%)	04	41.66	02	22.22
Unchanged up to 25%	01	8.33	06	66.66

DISCUSSION

In the national child development study¹² it was found that 10.7% of children were still wetting at 5 to 7 years and 4.8 % at eleven years. After 2 years and up to the end of 3 years of age child starts personality and ego development and if bladder control is forced on them, they develop negativism against their parents and start to refuse to obey them. Some children wet bed out of laziness or due to deep sleep¹³. Patients between 6-10 years were only included in the study. Out of them, 10 years were found maximum (36%) followed by 7 years (24%).

Academic performances: Academic performances of most of the patients were satisfactory. 32% each had very good (>80%) and excellent academic records (>90). Illingworth¹⁴ says, important factors in habit formation are the child's natural imitativeness, intelligence and memory. The highly intelligent child, who learns rapidly and has a greater understanding than others of his age, is likely to develop habits, good or bad, quicker than the less intelligent ones. The present study substantiates the above fact.

Socioeconomic status (SES): Many studies have been in support of that, socioeconomic features like poor home, domestic friction and delinquency in the family are causes for enuresis. Martin Roth¹⁵ in his symposium pointed out that, a large number of indices of social adversity, the greater the likelihood of

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enuresis. In the present study lower-middle SES (40%) and lower SES (24%) was found marked which substantiate the above-mentioned consideration for SES.

Family history of enuresis: Positive history of enuresis of either parents or siblings was reported in 28% of the patients which supports the genetic consideration of enuresis. Researchers say that such children have a first-degree biological relative who has had enuresis^{16.17}.

Bowel habit: Bowel habit found irregular in 60% of the patients, Studies suggest its role in enuresis as an unproven or mixed cause. It is thought that irregular bowel habit leads to constipation. The reason for bedwetting in constipated children may be due to less space because of stool which provides little space to fill the bladder and restricted bladder cannot hold the normal amount of urine and overflows quickly, particularly at night during sleep.¹⁸

Sleep: Deep sleep was reported in 100% of the patients. The role of sleep as a causative factor for enuresis is reported by Wille, ¹⁹ discussed an alteration in arousal from sleep in response to the sensation of a full bladder. Broughton, in 1968, proposed the same theory and explained further that enuretic sleep normally but suffer from an arousal disorder²⁰.

Diet, Dietary intake habit and Dominant *Rasa***:** 84% of the patients were vegetarian and most of them

i.e.,72% had *Samshana* and 28% had *Vishmashana* dietary intake habits. Rasa dominance was found mainly were *Katu* (56%), *Madhura* (36%) and *Amla* (32%). *Samshana* and *Vishamashana* etc are said to be capable of producing any serious disease²¹ by vitiating Agni. When *Dusta Apachyamana amla annarasa* go to *Mutravaha srotas*, it results in *Mutraroga*²². It has been found in practice and also noted by Gerrard²³ that elimination of citrus fruits and juices, dairy products and chocolates and artificially coloured drinks reduce bedwetting in children.

Emotional makeup: Tension (52 %), Anxiety (44 %) and Irritability (64%) were found significantly high while Depression was found only in 8%. Tension, anxiety and Irritability were found mainly with the children who were good achievers at school. This appeared mainly because of the overburden of study compelled by parents and school. Along with Tension and Anxiety, Depression was specifically found with secondary enuretic. It supports the fact that secondary enures is primarily psychological and is due to anxiety and insecurity.²⁴

Manasika Prakriti: Satvika Manasika Prakriti was found in 52% of patients followed by Rajsika and Rajsika Satvika i.e., 24% and 20% respectively. Despite Satvika Manas Prakriti immature mind (Sadhkapitta) of a child could not negate the persistent negativism due to SES and poor home and competitiveness among peers. It is seen that Satvika children are more sensitive towards problems of others so any problem of parents or home affects them and they hold it inside and persistent negative emotional conflicts may be responsible for enuresis due to insecurity.

Effect of therapy: In effect of therapy statistically both the groups showed highly significant (P< 0.001) results on the cardinal symptom (bedwetting). Associated complaints like lack of memory, excessive activity, lack of concentration was improved significantly in both groups. While on *Manas Bhavas* Group A showed better results than Group B.

Group A drug showed significant and highly significant results on all *Manas bhavas* except *Moha* and *Visada*, while Group B drug showed highly signifi-

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cant results on *Harsha* and *Krodha* only *a*nd significant results on *Shraddha* and *Priti*, other parameters were found insignificant (P>0.05).

A statistically significant difference between group A and Group B indicates that Brahmi Vati works better than Bimbimoola Vati in this study. The better result of Group A on Manasika Bhava is quite obvious since Group A drug Brahmi is well established Medhya. Research reveal that it improves memory (STM and LTM), retention and recall. Sadhaka Pitta is responsible for all emotions and *Medha*. Emotional conflicts alter the physiology of Mana and Sadhaka Pitta. An emotional conflict releases hormone and biochemical release in the mind and leads to negative emotions. Brahmi would have been capable of alleviating the negative emotions. As negative emotions influence the delayed maturation process so by alleviating negative influence would have promoted maturation of the mind mainly in primary bed wetter.

Probable mode of action of *Brahmi Vati*: Due to *Rasayana* property it would have strengthened all the cells including nervous tissues this way it would have facilitated maturation of mind and other autonomic actions which are thought to be the action of *Mana*.

Due to its *Mehaghna* property, it would have action over the urinary system, and it would have regulated excretion of urine.

Due to *Vata Kaphahara* property, it would have controlled *Vata*, especially *Apana* which is responsible for urine excretion and corrected *Apana* would have nourished another *Vayu* including *Prana*. Proper *Prana Vayu* would have corrected vitiated *Mana* by correcting *Sadhaka Pitta*.

Probable mode of action of Bimbimoola Vati: Bimbi is well known for its Mehaghna property. It was observed that Bimbimoola reduced per night wetting frequency in most of the patients but found failed to stop the wetting bed completely. Due to the Mehaghna property, it would have worked on Basti and would have reduced urine volume. But as Shayyamutra is a multifactorial disorder its action over Basti only would not have been sufficient to cure the disease.

CONCLUSION

Shayyamutra is the most common behavioural problem among others for physician visits worldwide. Its manifestation during sleep indicates the role of *Nidra*, *Mana* and *Sadhaka Pitta* involvement in its pathophysiology. As psychological factors play an important part in the manifestation of this disease *Brahmi Vati* having *Medhya* and *Mehaghna* properties is better than *Bimbimoola Vati*.

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