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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 commonest and obstinate behavioral problems, which is familiar to almost all the parents up to certain age of early life of their children. But it becomes nuisance to the children as well as parents, if it persists beyond the age at which bladder control is expected. It affects all the races, and children from all geographical areas. It's significantly affects self-esteem and instills guilt and shame in children. In modern medical science, antidepressants, anti-cholinergics, behavioral 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 problem. 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 complaint of persistent bedwetting at least for two to thrice time 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 were given Bimbimoola tablets in divided dose as per age for six weeks.*

Result: *Brahmi tablets showed encouraging result 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.*

Key words: *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 also suffer from 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 the 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 behavioral or psychosomatic diseases. Among all behavioral 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 years[2] 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 enuretics but secondary enuretics are mainly associated with psychological inflicts, which indicates the role of psychological inflicts in reversal of infantile behavior. 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 bed[3]and in Hong Kong the percentage are 57%. [4] A 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 replacement[5]. In India it remains a neglected problem.The prevalence at age 5years is 7% for males and 3% for females. At age 10, it is 3% for males and 2% for females and at age 18years, it is 1% for males and extremely rare for females.[6],[7] General population studies carried out in India show that 2.5% in the age group of 0 to 10 years have enuresis.[6] The prevalence of nocturnal enuresis has been difficult to estimate because of variations in its definition and in social standards.[8] [9]*Ayurveda* explains the

involvement of *Mana* in almost all diseases either prior to manifestation of a disease or later as a consequences of disease. Contemporary science also accept its role in manifestation many a psychosomatic or behavioral diseases. Same principle was considered in the present study. As disease *Shayyamutra* manifests during sleep only and sleep 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 for the treatment of *Mana* in the present study. Hence Brahmi, being *Medhya* drug was selected for 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.

Aims 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 daytime incontinence and having history of repeated voiding of urine in bed or clothes at least 2-3 times in a week were included in this study. 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 defect of 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 dose prescribed for *Brahmi Churna* in Data base[10] on medicinal plants i.e. 10 g maximum for adult and it was calculated for 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 of all the suitable *Ayurvedic* and modern parameters essential for the assessment of the condition of the patients. Suitable scoring pattern adopted in the previous research work[11] for cardinal symptom and associated symptom was adopted, and an arbitrary scoring pattern was made for assessing of the *Manasika Bhavas* mentioned in *Vimanasthna* on the basis of *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 to 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 above mentioned 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:

Base line data:

Total 25 patients, 13 in Group A and 12 in Group B were registered. Out of 25, total 4 patients were dropped the treatment in between the study. Maximum numbers of children i.e. 92% were Hindu and had full term normal delivery. 100% children were immunized properly and had normal growth and development except night bladder control. 92% children from *Jangal Desha* and 32% each had very good (80%) and excellent (>90%) academic performance . 56% had joint family ,80% were urban and 40% were from lower middle socio economic status. 36% of children of 10 years. females were 56% and had past history of *Krimi* (60%). 28% had positive family history and 48% had no treatment history. 60% had irregular bowel habit and 100% had deep sleep. 64% had 8-9hrs sleep duration, 84% were vegetarian and *Samshana* dietary intake were found in 72% of the patients. *Katu* (56%) followed by *Madhura* and *Amla* in 36% and 32% respectively. 100% children were of nocturnal enuresis, 88% were primary enuretics, 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 study of Gerrard. Monosymptomatic nocturnal enuresis were 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 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 cardinal symptom (Bed wetting)

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 score		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 score		X	%	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 score		X	%	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 cardinal symptom (bed wetting)

Bedwetting				χ^2	P
No of patients				11.74	< 0.001
Group	≥50%	< 50%	Total		
Group A	9	3	12		
Group B	1	8	9		
Total	10	11	21		

Table 7: Overall effects of therapies on 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 study[12] 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 to them they develops negativism against their parents and start refuse to obey them. Some child wet bed out of laziness or due to deep sleep[13]. The 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 the patients were satisfactory. 32% each had very good (>80%) and excellent academic records (>90). Illingworth[14] says, important factors in habit formation are the child's natural imitativeness, his intelligence and memory. The highly intelligent child, who learns rapidly and has a greater understanding than other of his age, is likely to develop habits, good or bad, quicker than the less intelligent ones. Present study substantiates the above fact.

Socio economic status (SES): Many studies have been in support of that, socioeconomic features like poor home, domestic friction and delinquency in family are cause for enuresis. Martin Roth[15] in his symposium pointed out that, the large number of indices of social adversity, the greater the likelihood of enuresis. In present study lower middle SES (40%) and lower SES (24%) was found marked which substantiate 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 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 of bed wetting 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 enuretics sleep normally but suffer from an arousal disorder[20].

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 habit. Rasa dominance found mainly were *Katu* (56%), *Madhura* (36%) and *Amla* (32%). *Samshana* and *Vishamashana* etc are said to be capable in producing any serious disease[21]by vitiating agni. When *Dusta Apachyamana amla annarasa* go to *Mutravaha srotas,* it results into *Mutraroga*[22]. It has been found in practice and also noted by Gerrard[23] 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 overburden of study compelled by parents and school. Along with Tension and Anxiety, Depression was specifically found with secondary enuretics. It supports the fact that secondary enuresis 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 of *Satvika Manas Prakriti* immature mind (*Sadhkapitta)* of 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 affect them and they hold it inside, and that persistent negative emotional conflicts may 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 cardinal symptom (bed wetting). Associated complaints like lack of memory, excessive activity, lack of concentration were improved significantly on both the groups. While on *Manas Bhavas* Group A showed better result 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 significant result on *Harsha* and *Krodha* only *a*nd significant

result on *Shraddha* and *Priti*, other parameters were found insignificant (P>0.05). Statistical significant difference between group A and Group B, indicates that Brahmi Vati works better than Bimbimoola Vati in this study. Better result of Group A on *Manasika Bhava* is quite obvious, since Group A drug *Brahmi* is well established *Medhya.* Researches reveal that it improves memory (STM and LTM), retention and recall. *Sadhaka Pitta* is responsible for all emotions and *Medha*. Emotional conflicts alters 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 capable in alleviating the negative emotions. As negative emotions influence delay maturation process so by alleviating negative influence it would have promote maturation of mind mainly in primary bed wetter.

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

Due to its *Mehaghna* property it would have action over 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 other *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 *Mehaghna* property it would have worked on *Basti* and would have reduced urine volume. But as *Shayyamutra* is a multifactorial disorder so its action over *Basti* only would not have sufficient to cure the disease.

CONCLUSION:

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

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