

Seizure Control and Pattern of Behaviour in Children with Simple Febrile Convulsions – Effect of Mentat Syrup

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ABSTRACT

The aim of this placebo-controlled clinical study was to assess the efficacy of an herbal formulation, Mentat syrup, in children suffering from febrile convulsions. Fifty children with a history of febrile convulsion were included in the study. They were divided into two groups of 25 each. Mentat syrup or an identical placebo was given to each group. During the 6 month trial period episodes of febrile convulsions and behavioural pattern were recorded. At the end of the study it was observed that 36% of the children on Mentat syrup had a febrile episode, but did not suffer from convulsions. However, all the children in the placebo group who were febrile had episodes of convulsions. Children, on Mentat syrup showed improved behavioural pattern compared to the placebo group. Thus, it can be concluded that Mentat syrup can be a useful drug in the treatment of febrile convulsions.

Keywords: Mentat syrup, febrile convulsion, behavioural pattern, febrile seizures

INTRODUCTION

Febrile convulsions are the most common seizure disorders encountered during childhood, affecting about 5% of children in the age group of 6 months to 6 years¹. Viral infections of the respiratory tract, roseola and acute otitis media are frequent causes of febrile convulsions². These convulsions are associated with a rapidly rising temperature and usually develop at the peak of fever. A seizure is typically generalised, tonic-clonic in nature and lasts less than 15 minutes³. These criteria for febrile convulsions are met by 3% of all the affected children. Many of the affected children have recurrent febrile seizures and a minority of them have multiple recurrent seizures⁴. It is also noted that a small population of these children are at an increased risk of developing epilepsy later in life even when there are no associated risk factors such as a positive family history of epilepsy, initial febrile seizures prior to 9 months of age, atypical febrile seizures, etc⁵. Currently, besides the employment of active measures to control fever and a careful search for the cause of fever, no other treatment is given to a child with simple febrile convulsions, though such episodes are known to recur. Prolonged anticonvulsant prophylaxis with anti-epileptic drugs for the prevention of recurrent

febrile seizures is rarely justified considering their limited effectiveness and long-term side-effects⁶. However, anticonvulsant therapy is justified when the seizures are complex, the child has neurological deficit or mental retardation or there is family history of seizures. The present study was undertaken with a view to study the efficacy of Mentat syrup as a prophylactic agent in the prevention of the recurrence of febrile convulsions and its effect on the behavioural pattern of affected children.

Mentat syrup chiefly comprises herbs such as *Bacopa monnieri*, *Nardostachys jatamansi*, *Centella asiatica*, *Acorus calamus* and *Prunus amygdalus*. *Bacopa monnieri*, commonly called Brahmi, is an important ingredient in a number of Ayurvedic preparations used in the treatment of epilepsy. It also has a mild sedative property^{7,8}. *Nardostachys jatamansi* is an important herb used in the treatment of convulsions. It produces a significant reduction in seizure frequency and also improves intellect and memory^{9,10}. *Centella asiatica* is a neurotropic agent with anticonvulsant activity. It brings about a marked improvement in children with behavioural problems¹¹. *Acorus calamus* is recommended in the treatment of epilepsy and it also enhances learning performance¹². *Prunus amygdalus* is reported to improve brain functions¹³.

MATERIAL AND METHODS

A placebo - controlled clinical trial on Mentat syrup, was conducted in fifty children with a history of simple febrile convulsions. A detailed history, clinical examination and relevant investigations such as hemogram, serum electrolytes, calcium, phosphorous, alkaline phosphatase and blood urea, skull x-ray, C.T. scan, fundoscopy and C.S.F examination were conducted as and when the condition required. Children with seizures lasting more than 15 minutes, permanent neurological abnormalities, organic brain lesions, mental subnormality and other associated debilitating illnesses were excluded from the study.

Fifty children with febrile convulsions were included in the study (Table 1). These children were randomly divided into two groups of 25 each. Twenty five children received Mentat syrup at a dose of 1 teaspoonful twice daily over a period of six months and the remaining 25 children were administered an identical-looking placebo at the same dosage for six months. During the study period the number of febrile episodes and associated febrile convulsions in each child were noted. The behaviour of the children with special reference to their activity, concentration and cognitive functions were enquired in each case and recorded.

Table 1: Shows the age distribution of the patients

Age group (years)	Children on Mentat syrup		Children on placebo	
	No. of children	Percentage	No. of children	Percentage
0 – 1	03	12	03	12
1 – 3	12	48	15	60
3 – 6	09	36	06	24
Above 6 years	01	04	01	04
Total	25	100	25	100

RESULTS

All the children responded well to Mentat syrup with regard to both the prevention of recurrence of febrile convulsions and improvement in the behavioural pattern. It was

observed that though 9 out of 25 children (36%) on Mentat syrup had febrile episodes during the study period, none of them suffered from febrile convulsions. However, all the 8 children (32%) in the control group who had fever developed convulsions on at least one occasion (Table 2).

Children on Mentat syrup				Children on placebo			
Febrile episodes		Convulsive episodes		Febrile episodes		Convulsive episodes	
No. of children	Episodes	No. of children	Episodes	No. of children	Episodes	No. of children	Episodes
6	1	25	0	6	1	7	1
2	3	0	0	1	4	1	4
1	2	0	0	1	2	17	0
16	0	0	0	17	0	0	0

A marked improvement was noted in the behavioural pattern of the children. Fifteen children (60%) receiving Mentat syrup presented with an improvement in activity, concentration and cognitive functions. However, no such improvement was noticed in the placebo group (Table 3).

	Children on Mentat syrup				Children on Placebo			
	Improved		No change		Improved		No change	
	No.	%	No.	%	No.	%	No.	%
Activity	15	60	10	40	0	0	25	100
Concentration	15	60	10	40	0	0	25	100
Cognitive functions	15	60	10	40	0	0	25	100

DISCUSSION

Febrile convulsion is a common paediatric emergency with about 5% of the children getting one such convulsion during the first 6 years of life. The convulsion is generally single in one episode of fever, occurs at the height of temperature, brief, generalised and followed by a short period of drowsiness. There is no neurological deficit following the attack and the EEG pattern is generally normal. A simple febrile convulsion spontaneously remits without specific treatment and most of the time the seizure is no longer present by the time the child reaches the hospital. Parents should therefore be provided adequate general guidelines with regard to the management of febrile illness by the use of antipyretics and tepid sponging, as well as provision for first aid treatment in the event of a febrile convulsion and they should be advised to seek medical help when the seizure does not clear quickly. Though febrile convulsions have a tendency to recur, prophylaxis for the prevention of subsequent attacks with the use of anti-epileptic drugs is considered controversial¹⁴. Researchers have showed that anti-epileptics such as phenytoin and carbamezapine are ineffective in febrile convulsions. Phenobarbital, in addition to being ineffective, may decrease cognitive functions and intelligence quotient scores¹⁵. Sodium valproate has been reported to reduce the incidence of febrile seizure recurrence but its risks far outweigh the benefits as it can produce life-threatening complications in young children^{16,17}. Hence, a safe and effective drug with good patient compliance is preferred for the prevention of recurrence of febrile convulsions.

Previous Studies on Mentat syrup have proven to be beneficial as a good prophylactic agent in the prevention of recurrence of febrile convulsions^{18,19}. The ingredients in Mentat syrup act as a nervine tonic and have a non-excitatory influence on the central nervous system and thus exert a calming action. Many of the herbs have a safe anticonvulsant activity and produce a significant reduction in seizure frequency.

CONCLUSION

In the present study, though children receiving Mentat syrup had episodes of fever, none of them developed convulsions; while all the children who had fever in the control group developed convulsions during the study period of 6 months. There was a significant improvement in the behavioural pattern of children receiving Mentat syrup, particularly with respect to their activity, concentration and cognitive functions. The children receiving placebo did not show any improvement in their behavioural pattern. Thus, Mentat syrup plays a pivotal role in the prognosis of children with febrile convulsions by bringing about an overall improvement in the behavioural pattern of the affected children.

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