Epilepsy and Behavioral Disorders in Children – Efficacy of a Herbal Formulation (Mentat)

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Mentat, a herbal formulation is known to improve mental performance, control seizures and normalize behavioral disturbances. A study was conducted to evaluate the effect of Mentat on 20 children with epilepsy, behavioral disorders and poor scholastic performance. The children were aged between 2-18 years. There were 12 male and 3 female children below 10 years of age and 4 male and 4 female children above 10 years of age. The children underwent preliminary assessments, which included physical examination, neurological and psychological interviews, aberrant behavior checklist and WISC-R scale. Mentat was administered at a dose of 3-6 tablets per day and assessment was done at 3 months and 6 months interval. Improvement in behavior was significant and impressive. There was an improvement in school performance, which could be related to improvement in behavior. However, improvement in epilepsy was only marginal.

INTRODUCTION
Epilepsy is the most common neurological disorder in adolescence affecting 1 in 150 children, often associated with behavioral disturbances and poor school performance. The basis of these associated abnormalities may be due to epilepsy as a disorder secondary to medication or part of an etiological syndrome, such as post-anoxic encephalopathy.

Even in healthy teenagers, coping with emerging adulthood is a major challenge. A chronic disability such as epilepsy simply magnifies the problems of adolescence, and the penalties for seizures at this time are far more severe than in childhood. Epilepsy and its treatment have a direct bearing on major aspects of lifestyle such as education and employment prospects, driving ability, consuming alcohol and recreational drugs, relationships, contraception, pregnancy and parenthood. Self-consciousness is a paramount and deviation from peer group norms assumes great importance: epilepsy can be disastrous for an adolescent’s self esteem and sense of identity. Adolescents with epilepsy are often caught between pediatric and adult medical disciplines, with neither service specifically addressing their needs.

For children and adolescents, school is their work place. Successful school performance is essential for psychological growth and development. Social competency and skills are developed and modulated both within the family and in school, but practiced and mastered only in the school. The development of self-image and self-esteem is based on the success in school. Feedback from the school concerning academic performance and social interaction influences the parents’ image of their child. Thus, if something interferes with success in school, the impact will effect the emotional, social and family functioning of a child. Academic performance requires the integrated interaction of cognitive, motor and language
functions of the brain. These disabilities affect every aspect of the individual life during each stage of psychosocial development.

Mentat reduces the seizure frequency and the duration of each seizure. It is also found that it reduces the dosage of anti-epileptic drugs significantly.¹ Mentat has shown considerable influence on memory, intelligence and attention span.² ³ It has been found to improve concentration and learning ability even in retarded children.⁴ ⁵

In another study, mentally retarded children showed improvement in learning and intelligence within 6 months of Mentat therapy.⁶ Mentat has proven useful in behavioral problems of children especially hyperkinetic behaviour associated with mental retardation.⁷

A study was conducted in children with various types of behavioral disorders and epilepsy. The behavioral disorders in these children were due to lack of attention, easy distractibility, hyperactivity, aggressive behavior and violence.

MATERIAL AND METHODS
Twenty children aged between 2-18 years who had epilepsy associated with poor school performance and behavioral disorders were selected for the trial. Out of these, 15 were below 10 years age (Male:Female = 12:3) and 8 were above 10 years (Male:Female = 4:4). Children were completely evaluated in the first visit.

The evaluation included
- neurological examination;
- Rutter-Graham psychiatric interview;
- aberrant behavior checklist
- WISC-R scale
- detailed seizure history.

Routine investigations for epilepsy and baseline Hemogram, X-rays, EEG, CT/MRI (brain) were done. Scoring was done as per the above scale. Few children also underwent psychometric evaluation by clinical neuropsychologist. Details of the disorder included in the study are tabulated below (Table 1).

<p>| Table 1: Number of children with epilepsy in each category and their outcome after Mentat |
|-----------------------------------------------|------------------|-----------------|-----------------|------------------|</p>
<table>
<thead>
<tr>
<th>Type of disorder</th>
<th>No. of patients</th>
<th>Outcome</th>
<th>Epilepsy</th>
<th>Behavioral disorder</th>
<th>Poor school performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epilepsy</td>
<td>9</td>
<td>Excellent</td>
<td>–</td>
<td>3</td>
<td>–</td>
</tr>
<tr>
<td>Behavior + Poor school performance</td>
<td></td>
<td>Good</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Satisfactory</td>
<td></td>
<td>3</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>No change</td>
<td></td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Epilepsy + Behavioral disorder</td>
<td>3</td>
<td>Excellent</td>
<td>1</td>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td>Good</td>
<td></td>
<td>1</td>
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<tr>
<td>Satisfactory</td>
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<td>No change</td>
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</tbody>
</table>

Mentat was administered at a dose of 3-6 tablets per day, depending on age and body weight. Reassessment was done 3 and 6 months later. The children were subjected to complete blood count, SGOT and SGPT as a part of epilepsy follow up. None of the children showed an organic lesion on neuroradiology.

The response was evaluated using subjective and objective parameters. Subjective symptoms were assessed for child’s performance and behavior by both parents and teachers. Objective assessment was done using psychometry test as WISC-R and Rutter-Graham psychometric interview.
Overactivity, fidgeting, attention span and persistence, distractibility, anxiety emotional responsiveness, relationship with examiner, mood levels, disinhibition, spontaneous talk, smiling were evaluated using Rutter-Graham psychometric interview.

Irritability, agitation and crying, lethargy and social withdrawal, stereotype behavior, hyperactivity and non-compliance and excessive speech were evaluated using behavior checklist score.

RESULTS
Among 9 patients with epilepsy, behavioral disorder and poor scholastic performance, 5 reported for follow up and 3 showed significant improvement in behavior. Two children each showed slight improvement in epilepsy and school performance. Of the 4 with epilepsy and behavioral disorder, 3 reported for follow up. One of the 3 improved remarkably in both, epilepsy and behavior. The results of the children who had no epilepsy are depicted in Table 2.

Hence, though follow up was possible in 11 out of 20 patients, (55%), the improvement in behavior among all groups was obvious and observable, suggesting that Mentat is useful in improving behavior in children irrespective of it’s etiology.

DISCUSSION
Compliance with drug treatment is a particular problem in adolescence. As at any age, the reasons include denial of epilepsy, concern over side effects and about good seizure control. Side effects are extremely important at this age since even mild cognitive dysfunction may permanently harm education and employment prospects. Cosmetic effects limit the usefulness of certain anti-epileptic drugs (such as phenytoin) in young people.

Epilepsy affects educational and employment prospects and career choices being inevitably restricted by the diagnosis. Approximately 1% of the population is estimated to be mentally retarded. Significant average intelligence recognized before the age of 18 years and accompanied by impairment in adaptive functioning is called mental retardation. Seizure disorders are seen in 0.5% of the general population, and about 20% of mentally retarded children suffer from epilepsy. If the retardation is severe the seizures are also twice as common. A study has shown that the prevalence of mild mental retardation was 0.37% to 0.59%, whereas the prevalence of moderate, severe or profound retardation was 0.3% -0.4%.

Side effects with Phenytoin include hirsutism, gum atrophy and aggravation of acne, which occur during chronic use even in patients with Phenytoin concentration in the therapeutic range. Patients on Carbamazepine have blurring of vision, unsteadiness or drowsiness.
Valproate is effective in generalized toxic-clonic seizures and can be used to treat a wide range of seizure types, but patient compliance is low due to unacceptable side effects such as sedation, weight gain or tremors.⁹

Many studies have shown that Mentat is a safe and useful drug in mentally retarded children. The study also showed that Mentat is useful in improving scholastic performance in many children who were included in the study.

CONCLUSION
The safety and efficacy of Mentat, a herbal formulation, was observed in the treatment of behavioral disorders in children. Additional benefits in some patients though marginal, include better epileptic control and improvement in scholastic performance.

ACKNOWLEDGEMENT
We are grateful to The Himalaya Drug Company, Makali, Bangalore, India, for sponsoring and supporting this study.

REFERENCES