Role of Mentat in the Management of Post-Stroke Aphasia

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INTRODUCTION

Aphasia is a disturbance of comprehension and formulation of language caused by dysfunction in specific brain regions. It results from a breakdown of a two-way translation that establishes a correspondence between thoughts and language. It can be caused by virtually any necrologic insult that affects the cerebral hemispheres provided that language-related areas are involved. Most cases are caused by stroke, head injury, cerebral tumours or degenerative dementias such as Alzheimer’s disease. Stroke alone causes about 1,00,000 new cases of aphasia every year and head injury causes at least twice as many.

In nearly every instance, aphasia is a devastating condition. Not only does it disrupt communication, but it often compromises decision-making also. The patient is unable to communicate and hence suffers from serious psychosocial disabilities.

There is no standard treatment of aphasia. Each patient requires an individualised programme tailored to all the personal, psychosocial and linguistic factors. Sometimes it is difficult to express the efficacy of any therapy because quite a good number of cases show some degree of spontaneous recovery. There are many limitations to speech therapy in post-stroke aphasia patients. Several factors like age, sex, site of lesion and severity of stroke are responsible.

The assessment of efficacy of any therapy is not very useful because of the absence of any objective parameters, through the application of Minnesota tests for differential diagnosis has shown some objectivity in the measurement of speech and language disability. David et al. and Meikle et al. showed that there was a great variation in speech and language recovery in aphasia cases following speech therapy. Dixit et al., however, noticed the efficacy of Mentat, a herbomineral preparation in the improvement of language learning and speech defects in children with mild mental deficiencies. With this background information about Mentat it seemed logical to further investigate its efficacy in patients of post-stroke aphasia by conducting a placebo-controlled clinical trial.

MATERIAL AND METHODS

Eighteen cases of aphasia following stroke were selected for this trial. Those who visited for post-stroke rehabilitation were also selected for the present investigation. Such cases had a history of stroke of 1 to 3 months’ duration. Speech therapy was introduced in all the cases as per standard conventional methods and the patients were divided into two groups. Eight cases were in the control group and the remaining 10 in the Mentat treated group. The Minnesota test for the differential diagnosis of aphasia was used for the assessment of expressive and receptive communication disabilities as advocated by Schuell. Clarity in expression of words was monitored by using this scale. This test is applicable for adults only and with the help of this test the receptive and expressive
communication abilities were assessed in cases of aphasia. The following steps are involved in assessing the communication abilities.

1. **Receptive ability:**
   a. Understanding the command
   b. Recognising the persons
   c. Identifying the objects
   d. Distinguishing the differences between 2 objects (shape, size, colour, etc.)
2. **Expressive ability:**
   a. Speech and non-speech sound
   b. Imitation
   c. Vocabulary - from one to two syllables to one word
   d. Improper syntax formation.

The patients were divided into two groups. Group A received Mentat at the dose of 2 tablets 3 times a day along with speech therapy, while Group B received an identical-looking placebo at the same dose, also along with speech therapy. The trial was of six months duration. The tests were applied at the beginning of every month and the end of the trial and the results were analysed using unpaired students ‘t’ tests.

**RESULTS**

The expressive and receptive communication ability index showed a marked reduction following cerebrovascular stroke. After six months of treatment, both the control and Mentat-treated groups showed improvement in both expressive and receptive communication ability. However, the improvement was rapid and more significant in the Mentat-treated group than in the control group after six months of therapy (See Table and Fig.)

<table>
<thead>
<tr>
<th></th>
<th>Control (n=8)</th>
<th>Mentat (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Receptive Speech Ability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial</td>
<td>16.5±8.5</td>
<td>17.2±5.8</td>
</tr>
<tr>
<td>2 month</td>
<td>26.4±8.5</td>
<td>36.4±6.8</td>
</tr>
<tr>
<td>4 month</td>
<td>32.4±8.35</td>
<td>45.40±7.40</td>
</tr>
<tr>
<td>6 month*</td>
<td>40.8±5.85*</td>
<td>56.4±4.2**</td>
</tr>
<tr>
<td><strong>Expressive Speech Ability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial</td>
<td>6.5±2.37</td>
<td>8.6±2.45</td>
</tr>
<tr>
<td>2 month</td>
<td>12.40±3.85</td>
<td>20.50±4.37</td>
</tr>
<tr>
<td>4 month</td>
<td>18.50±4.32</td>
<td>28.40±5.82</td>
</tr>
<tr>
<td>6 month</td>
<td>26.40±4.80</td>
<td>38.50±5.87*</td>
</tr>
</tbody>
</table>

* *p<0.001 as compared to corresponding initial readings
** p<0.05 as compared to control
DISCUSSION
After injury, the brain tends to show some degree of spontaneous functional recovery provided that the cause of the damage is removed. Left untreated, however, the altered speech and language of a patient will not return to normal. Thus, treatment of an aphasic patient is beneficial and not harmful.\(^7,8\)

In instances in which the causative diseases is treatable and non-progressive (e.g. a stroke/an excised benign tumour or a head injury) aphasia is amenable to treatment, but the outcome of treatment depends largely on the nature of the cause, symptoms and individual severity. Other factors, however, also influence the results. They include the level of intelligence and communication skills present before the injury, the emotional and affective balance present before and after the injury and the presence and a degree of cognitive defects not related to language. The success of treatment thus depends on each patient’s characteristics before the injury, the severity and type of language and other defects and emotional status.

Speech therapy has got an important but limited role in patients of post-stroke aphasia. Several attempts have been made to improve the speech defect in post-stroke rehabilitation programmes. Speech therapists have provided several objective scales for the measurement of speech defects in aphasia cases.\(^9-11\) Beyn and Shokhor - Trotskaya\(^12\) compared the progress in aphasics given different forms of treatment. These workers could not demonstrate the differences in speech recovery following the application of scales developed for speech recovery. The basic objective of rehabilitation of a stroke victim is to help him overcome the disabilities resulting from brain damage. Spontaneous recovery is generally noticed and speech defects also improve without any therapy.\(^13-14\) But in those cases also where the patients were improving spontaneously, it took a very long time for the restoration of normalcy. In clinical practice it has been observed that complete speech recovery is generally not possible and some residual effect is present during the formation of a complete sentence. Mentat, an Ayurvedic herbal preparation, has been reported to have a significant role in improving the speech defects in children.\(^15,16\) In the present study when Mentat was administered in post-stroke aphasic patients along with speech therapy, there was a rapid and almost complete recovery of both the expressive and receptive speech abilities.

It can now be concluded that Mentat can play a useful supportive role in post-stroke rehabilitation programmes.

REFERENCES
7. Basso A., Capitani E., Vignolo L., Influence of rehabilitation on language skills in aphasic


