Memory Functions as Affected by Electroconvulsive Therapy

Memory loss following ECT is a selective neurological impairment. It has been known for a long time that injury to either of two areas of the brain leads to an amnesic syndrome. The medial temporal region, including the hippocampal formation and the amygdala, and the diencephalic midline, including the dorsomedial nucleus of the thalamus and the mammillary bodies, have been most often implicated in the disorder. Amnesia is a circumscribed deficit that includes both anterograde and retrograde amnesia, in the absence of other defects of cognitive function.

The purpose of this chapter is to summarize what has been learned about ECT and memory loss. Specifically, how severe is the memory impairment, and how long does it last? Readers are invited to consult a number of recent reviews that consider these issues in somewhat more detail. The discussion here focuses in turn on anterograde amnesia—loss of the ability to accomplish new learning—and retrograde amnesia—loss of memory for events that occurred before ECT. Pertinent information will also be reviewed concerning the difference between bilateral and unilateral treatment. The discussion concerns the effects of a typical course of treatment, i.e., 6-12 treatments, and is based primarily on studies in which ECT was administered in the absence of concurrent drugs. The discussion concerns the effects of the ability to accomplish new learning in the absence of concurrent drugs. The discussion concerns the effects of the ability to accomplish new learning in the absence of concurrent drugs. The discussion concerns the effects of the ability to accomplish new learning in the absence of concurrent drugs. The discussion concerns the effects of the ability to accomplish new learning in the absence of concurrent drugs.

The cognitive side effects associated with ECT can be reduced by using brief-pulse stimulation instead of sine-wave stimulation. This issue will be touched on at the end of the paper.
One way is to obtain pre-ECT performance scores. These scores, however, might have
return to baseline functions after 72 days. There are two ways to determine baseline.
other material that is difficult to encode in words. It is known that memory for such
material depends on the integrity of the right temporal lobe. Memory for this
tests assess the learning and retention of faces, nonsense shapes, spatial layouts, and
considerably less than that associated with bilateral ECT, the advantage of right
unilateral ECT is not so great when so-called nonverbal memory tests are used. These
correct at all test intervals. A group of depressed patients not receiving ECT averaged
choice method. Over the intervals tested, performance improved from an initial level
9.5 words correct.

It is easy to document the recovery of new learning ability that occurs between each
treatment. Memory was tested 15 minutes after each list presentation by multiple-
associate learning, which asks subjects to learn 10 new associations e.g., army-table,
produce, without the help of cues, information that had been presented to them up to

In our study patients prescribed bilateral ECT were asked 10 questions about their
Inhang of the day you came to the hospital for your present
treatments later seemed to forget autobiographical inform?ation that had been reported
concerning the effects of ECT has been to ask about
Autobiographical memory after ECT was first evaluated systematically by Janis
ECT to other similar patients who have not received ECT.

In the past several years, studies have used both these methods. Testing instru

RETROGRADE AMNESIA

over a period of many weeks.

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backward gradient of retrograde amnesia is still evident at this time. Furthermore, recall
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MEMORY COMPLAINTS

DISCUSSION

To settle this issue, the authors performed a comparison between the patients prescribed ECT and the control patients. The patients prescribed ECT had a greater number of recent events that were reported as familiar, compared to the control patients. This suggests that the patients prescribed ECT may have a greater ability to recall recent events, even after treatment.

The authors also examined the number of events that were recalled at different time points after treatment. They found that the patients prescribed ECT were more likely to recall recent events, even after a period of six months. This suggests that the patients prescribed ECT may have a greater ability to recall recent events, even after a period of time.

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compromising efficacy. A sense of continuing memory problems might occur. Since the parameters must be selected individually for each patient, and since there is considerable variability in the electrical energy produced by conventional sine-wave current, and this difference in waveform was probably not an important factor in determining the severity of memory impairment than with right unilateral sine wave and markedly less impairment than unilateral pulse, unilateral sine wave, bilateral pulse, bilateral sine wave. It is not yet certain how to characterize the level of memory impairment associated with brief-pulse stimulation. The relative rankings of the four treatment combinations can be given in order of increasing memory impairment:

- Frequency = 60; pulse width = 0.75 msecond; pulse duration = 1.25 seconds for a total of about 22 joules of energy. If maximum dial settings are used to deliver
- About 22 joules of energy. The dial settings are set correctly, i.e., so as to optimizeseizure induction, but not to exceed seizure threshold. The ECT machine to obtain the full energy advantage without missing seizures or otherwise reducing the seizure threshold.

An important new finding is that the use of brief-pulse stimulation instead of conventional sine-wave stimulation is lost. Since the parameters must be carefully titrated course of right unilateral, brief-pulse ECT, designed to be as close to the general conclusions summarized here, i.e., regarding the impairment associated with brief-pulse stimulation. The relative rankings of the four treatment combinations can be given in order of increasing memory impairment: frequency = 60; pulse width = 0.75 msecond; pulse duration = 1.25 seconds for a total of about 22 joules of energy. If maximum dial settings are used to deliver
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