

The Use of Electroconvulsive Therapy in Pain Patients

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Twenty-one patients with primary chronic pain received electroconvulsive therapy (ECT) for concurrent affective symptoms. Twenty of the 21 patients experienced improvement in the level of their pain. ECT can be an effective treatment modality for patients who have chronic pain complicated by affective symptoms.

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The treatment of chronic pain is often frustrating. Many modalities have been used in this endeavor. Psychotropic medications, including antidepressants, are often used. One possible mechanism of their action involves both central and peripheral actions of serotonin.¹ Another may be the removal of superimposed affective symptoms that aggravate patients' pain perceptions.² Despite their effectiveness in many cases, antidepressants do not aid in the relief of chronic pain in all patients.¹ In these circumstances, other avenues of therapy are sought.

Electroconvulsive therapy (ECT) is an infrequently considered treatment alternative for chronic pain. ECT has been shown to alter cerebrospinal fluid and plasma levels of neurotransmitters, which have been implicated in the modulation of pain perception.³⁻⁷ These include

endogenous opioids and serotonin, which modulate pain perception via descending pathways from the midbrain to the nociceptive dorsal horn cells.

These theoretical benefits have been used clinically. In 1946, Pisetsky⁸ reported on a 55-year-old man whose depression and phantom limb pain improved with ECT. Several papers from the 1950s reported on a small series of patients with pain at a variety of sites (head, face, abdomen, back, chest, extremities) whose pain improved after a course of ECT.⁹⁻¹¹

In 1975, Mandel¹² reported that ECT alleviated symptoms of chronic pain and depression in 4 of 6 patients so treated. These patients endured backaches, atypical facial pain, headaches, or chest pains. They all received between 6 and 12 unilateral ECT treatments to the non-dominant hemisphere 3 times a week. In 1988 Salmon et al.,² however, found no significant change in pain, personality, or affective profiles after ECT treatment in four patients with intractable thalamic pain. In 1992, Hampf et al.¹ published a case report of a patient with intractable facial pain whose symptoms improved significantly after a course of ECT. Thus, the effectiveness of ECT in the treatment of certain chronic pain conditions remains unclear. We present

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what is to our knowledge the largest reported case series of patients treated with ECT for both primary pain complaints and affective symptoms.

METHODS

Subjects

We reviewed the medical records of all psychiatric patients with primary complaints of chronic pain localized to 3 or fewer specific body areas who received ECT from January 1, 1988, to June 1, 1992. Patients were excluded if they were under the age of 18, if their complaints were of generalized body pain, and if they had active nonsomatic delusions or hallucinations.

Assessment

Age and gender were recorded. Pain history included location(s) of pain, duration of pain, and prior treatments for pain (pharmacologic, psychodynamic, behavioral, physical therapeutic, or surgical). Psychiatric data included prior and active DSM-III-R psychiatric diagnoses, symptoms of affective disorder (whether or not the patient met DSM-III-R criteria for an affective disorder), previous psychotropic medication, and previous ECT trials. Past and active medical and neurologic illnesses and treatments were identified. ECT characteristics were determined, including type of machine used (Thymatron or Mecta), electrode placements, number of treatments, and treatment complications. Outcome data included subjective interpretation of chart records as to improvement, no change, or worsening of pain and affective symptoms, and any post-ECT complications. Follow-up data for this study were so limited that they were not included.

Data Analysis

Descriptive statistics were used to summarize pre- and post-ECT patient characteristics.

RESULTS

Over the 4.5-year period of this study, 21 patients with chronic pain received ECT. Of the 21, 10 were men and 11 were women. Their ages ranged from 56 to 82 years, with a mean age of 69 years. Table 1 shows the distribution of pain complaints. The patients had as many as, but no more than, three pain complaint sites; therefore, the number of patients recorded for each site exceeds the total number of patients studied. The duration of pain symptoms, as reported in Table 1, ranged from 2 months to more than 10 years, the median being 1 to 2 years.

The majority of patients had had pharmacologic or other interventions for their pain before receiving ECT. Table 2 summarizes their unsuccessful pre-ECT treatment experiences. Four of these patients reported some improvement in affective symptoms with or without relief of pain, 1 was unsure, and 1 reported no improvement after 3 weeks of alternating insulin shock therapy and ECT done in the 1950s.

Active and previous psychiatric diagnoses are listed in Table 3. Seventeen patients had at least one psychiatric diagnosis before the admission under study. Two-thirds were diagnosed as having a major mood disorder. One-third had a diagnosis of chemical dependency. None had formal Axis II diagnoses before this admission. At admission, all but 2 of the 21 patients were diagnosed as having major depression. Approximately one-fourth had active

TABLE 1. Pain characteristics

	Frequency (n)
Location	
Head/neck	8
Chest	1
Abdomen	8
Urogenital	5
Spine/limb	11
Duration	
≤ 1 year	9
> 1 ≤ 10 years	10
> 10 years	2

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