

Treatment of Methadone Withdrawal with Cerebral Electrotherapy (Electrosleep)

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SUMMARY The use of cerebral electrotherapy (CET) in methadone detoxification was studied in 28 patients. Fourteen patients received active CET; the other 14 acted as controls and received either simulated CET or only methadone detoxification therapy. One patient dropped out of the study. The Taylor Manifest Anxiety Scale and the Hamilton Anxiety Scale were administered before and after the study period. Nine of the patients receiving active CET were drug-free by the end of 8 to 10 days, and all experienced a marked reduction of their symptoms; the control group did not show significant changes. CET was clearly beneficial in the treatment of patients undergoing methadone withdrawal.

We undertook a research project in order to develop a technique for dealing with heroin addiction and methadone withdrawal. In the present study, we report on the effect of cerebral electrotherapy (CET), in patients at the Drug Addiction Unit at the Veterans Administration West Side Hospital, which is affiliated with the University of Illinois in Chicago.

CET was introduced into use in the United States by S. Rosenthal and co-workers (1970, 1972a, and c) at the University of Texas Medical School at San Antonio, Texas. The technique had been used extensively in Russia for many years. It was given primarily to patients suffering from chronic anxiety, insomnia or mild depression. Recently other workers have been using it with patients during their withdrawal from alcohol (e.g. Hood, 1972). Nothing has appeared in the literature on the use of CET in heroin or methadone withdrawal.

Method

The objectives of the study were to determine (1) whether anxiety decreases clinically, as measured with anxiety rating scales, after CET; (2) whether the amount of methadone intake decreases gradually with the use of CET; and (3) whether CET improves (both clinically and subjectively) the patient's sleep.

The criteria for patient selection were: (1)

heroin addiction and enrolment in the methadone maintenance programme, i.e. admission to the hospital for voluntary detoxification (withdrawal); (2) the presence of anxiety as measured by the Hamilton Anxiety Scale (HAS) and by the self-administered Taylor Manifest Anxiety Scale (TMAS) test (Farber and Spence, 1955) in which the patient scored at least 20 out of a maximum of 50 statements for anxiety; (3) difficulties in sleeping; (4) willingness to participate in the study for at least two weeks in a locked ward; (5) agreement not to take any tranquillizers or hypnotic medications while in the study; (6) aged between 18 and 60 years. Because of the nature of the hospital, all the subjects were male.

The 28 patients were randomly divided into two groups. The treatment group was of 14 patients who initially had TMAS scores ranging from 23 to 48, an intake of methadone of from 20 to 60 mg per day, severe anxiety as indicated by HAS scores, insomnia, psychosomatic complaints, and mild depression. This group received CET with a current frequency of 100 pulses per second and a pulse duration of 2 ms and with no base line direct current bias. Moist electrodes were applied to the forehead above the eyebrows and on the mastoid processes. The current was regulated so that the patient felt a slight, but not uncomfortable, tingling sensa-

tion over his supraorbital-frontal region and/or mastoid processes. This was usually produced by a current reading of 0.4 to 1.3 MA. With a higher current the patient felt uncomfortable, but there were no skin burns. A treatment lasted for 30 minutes, and each patient was treated ten times (once a day, Monday through Friday, for two weeks) An attendant remained with the patient during the treatment, which was given in a darkened room where the patient usually reclined on a couch.

The control group was randomly divided into subgroups, A and B, each containing 7 patients. Subgroup A patients initially had TMAS scores ranging from 22 to 41 and an initial intake of methadone from 30 to 40 mg. Their HAS scores indicated severe anxiety, insomnia, psychosomatic complaints and mild depression. The patients in Subgroup A received inactive {simulated} treatment. Simulated CET was administered by applying the electrodes in the usual way but without connecting the leads to the machine. The patient heard the loud clicking noise which usually indicates that the machine is on, but since it was not connected they did not feel any tingling sensation.

Subgroup B patients initially had TMAS scores ranging from 28 to 40 and an initial intake of methadone of from 25 to 40 mg. Their HAS scores showed severe anxiety, insomnia, somatic complaints, and mild depression. They did not receive either active or simulated CET.

Results

Of the 14 patients who received active CET, 7 had their anxiety reduced to normal levels, the mean TMAS score for the group falling from 31 (before treatment) to 20 {after 10 days}. (Normal scores in the TMAS is in a range of from 8 to 18.) The other 7 patients showed a 25 to 50 per cent reduction in TMAS scores for anxiety. The methadone intake was reduced considerably in all. At the end of 6 to 8 treatments with CET the methadone intake for 9 of the patients was zero, and at the end of 10 sessions an additional patient was not taking methadone. Only three patients were taking methadone (from 10 to 15 mg) at the conclusion of 10 treatments with CET. In this group, one patient dropped out of the study after the first treatment.

The subjective experience of the patients was that of being restful and of having a general feeling of well-being. They also stated that their sleep was good and undisturbed after the third treatment of CET. For these patients the scores of all HAS items were diminished.

For the patients receiving simulated CET, the changes in TMAS score were very slight, the mean value falling from 29 to 27. The methadone intake did not change in 4 patients after 10 treatments; methadone reduction in the remaining 3 patients was from 5 to 10 mg. These 7 patients complained of not sleeping well, had a number of somatic complaints, and were both anxious and depressed. The HAS score did not show much variation when compared with the initial score.

Among the 7 patients who did not undergo either active or simulated CET and who were on methadone detoxification therapy only, the TMAS scores increased in 2 cases, was the same in 1 and was decreased 1 to 2 points after 10 days in the remainder. The methadone intake was the same in 3 patients and decreased in the other 4 patients after 10 days. These 7 patients were anxious, complained of sleeping difficulties, and did not show significant changes in their HAS scores when compared with the initial scores.

Discussion

Addicts complain that it is easier to give up heroin than methadone. It seems as if the symptoms of methadone withdrawal linger on and on, and the craving for the drug persists for many days.

In the present study the majority of patients receiving active Ch.T were drug-free by the end of ten treatments, and in those who were not drug-free, drug intake had decreased by more than 80 per cent. Symptoms, as clinically observed or objectively measured by the rating scales, were markedly reduced. Although some patients went to sleep during the treatment regardless of the level of current, this usually did not affect the outcome.

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