METRAZOL (LEPTAZOL, CARDIAZOL) WITH ECT

DEAR SIR,

About twenty years ago my associates and I published one of the first papers on the use of succinyl choline in electroshock therapy ('Report on the Use of Succinyl Choline Dichloride in Electroconvulsive Therapy', *American Journal of Psychiatry*, **109**, No. 12, June 1953).

Since that time, there appears to have been relatively little advance in electroshock therapy.

For years we have noticed that some patients who make little if any response to shock treatment (curative response) have often received an incomplete seizure. The seizure is either brief in duration, is partial or ends abruptly. Occasionally, a patient may not have a seizure at all. If a large amount of succinyl choline is used, the psychiatrist may not even be aware of a deficient seizure. Seven or eight years ago, we started giving intravenous metrazol to enhance the seizure in these patients.

The average patient is given 8 c.c. of a 10 per cent solution of Brevital. The needle is left in the vein and the syringe is removed. Succinyl choline, 20 to 80 mg., depending on the patient, is then administered. Again the needle is left in place and the syringe removed. Metrazol, 5 to 8 c.c., is promptly administered intravenously.

After a wait of approximately one and one-half minutes, during which time the patient is given positive pressure oxygen, electrical treatment is then given. The average dose of metrazol is 5 c.c., but we have no hesitancy in increasing this dosage if indicated. The metrazol does not arouse the patient. Adequate convulsions are produced. We have seen no delayed seizures, nor have we seen status epilepticus. By using succinyl choline, the seizure is little more pronounced than in an ordinary successfully administered electroshock treatment.

I believe that it is well known that intravenous Valium is probably the best medication to use in terminating status epilepticus. Occasionally one will encounter a patient who while recovering from the administration of an electric treatment becomes highly disturbed. This is similar to the state of a patient in the first stage of anaesthesia. It occurs whether or not a patient has had metrazol. We have found that the administration of 1 to 2 c.c. (5 mg. per c.c.) of diazepam (Valium) intravenously is a superb quieting agent. The Valium is given in such cases immediately after the effects of succinyl choline have worn off. Intravenous Valium tends to depress respiration, and for this reason patients should be kept in the treatment room until respiration is well established. Often the same dosage of Valium seems to prevent, or minimize, post-treatment headaches.

I am writing this letter in the hope that others may find our experience helpful.

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KETAMINE AS AN ANAESTHETIC FOR ECT

DEAR SIR,

The article 'Ketamine: A Safer Anaesthetic for ECT', by Brewer and associates (*Journal*, June 1972, 679–80) is quite interesting for a number of reasons.

The authors refer to ketamine as a safer anaesthetic for ECT, but they present no evidence to support the claim made in their title. Although they report a total of 62 anaesthetics being provided by ketamine, they do not report on any evidence that the morbidity associated with the ketamine was lower than with a similar group of patients treated with other anaesthetics. They do report that 24 intravenous thiopentone anaesthetics had been administered to a control group, but no morbidity was found in that group either. One of the factors which they have ignored is the reduced safety to the patients undergoing ECT and to other patients in the recovery room when recovery time is prolonged, as occurs with the use of intramuscular ketamine, the average awakening time being in the neighbourhood of 30 minutes with a range up to 1¾ hours. In an active recovery room this would be a considerable complication in the care of our patients. They further fail to take into account the potential hazard of anaphylactic reactions which occur with the use of hyaluronidase mixed with the ketamine which is administered intramuscularly. The use of hyaluronidase has largely gone out of favour because of the potential seriousness of this reaction. Additionally, the authors mention only briefly that, following the induction of anaesthesia, succinylcholine and atropine were given to each patient, and this, of course, requires a further intravenous injection. In the case of a patient who is particularly apprehensive about intravenous injections, the advantage of inducing anaesthesia by an intramuscular route is worth consideration.

The particular technique suggested by Brewer and his associates, that is, intramuscular ketamine plus hyaluronidase, is a method which might be useful in very selected patients. However, for the reasons which I have enumerated above, I feel that it may not be as safe as the intravenous thiopentone-succinylcholine technique which we are now using and with which