Epileptiform seizures with maprotiline hydrochloride

P. MARKS
M.Sc., M.R.C.P.

J. ANDERSON
B.Sc., M.A., M.D., F.R.C.P.

R. VINCENT
M.B., B.S., M.R.C.P.

J. T. HUTCHINSON
M.D., F.R.C. Psych., D.P.M.

H. M. REES
M.B., B.S.

Department of Medicine, King's College Hospital, London

Summary

Two cases are described who developed epileptic seizures whilst taking maprotiline hydrochloride in therapeutic dosage. In both cases the electroencephalogram was normal and the fits stopped on withdrawal of the drug.

Case reports

The first patient was a 46-year-old housewife. She had suffered chronic depression for 4 years and was a poor sleeper. She had never had any history of cardiac dysfunction, epilepsy or diabetes. Six weeks before presentation her treatment was changed to maprotiline hydrochloride 75 mg at night. After 6 weeks of this treatment she had an episode of convulsive shaking of the limbs. There was tongue biting and incontinence of urine. She lost consciousness and the attack was terminated with diazepam. A blood level of maprotiline was taken and this was 317 µg/l which is within the therapeutic range. All serum biochemistry was normal as was an electrocardiogram. An electroencephalogram was reported as being compatible with a drug-induced fit.

The second patient was a 21-year-old film extra. He had a 5-year history of anxiety treated with benzodiazepines. He had several hospital admissions for evaluation and in January 1977 he was prescribed maprotiline hydrochloride 75 mg/night. The medication improved his morale greatly. In January 1978 he was admitted with an epileptic fit. There was tongue biting and incontinence during this episode. He was treated with intravenous diazepam. The maprotiline hydrochloride was stopped and he has had no further fits. A brain scan and ECG were completely normal.

Discussion

In a co-ordinated series of trials in 12 countries Pinto *et al.* (1972) examined the whole spectrum of

symptoms of depression and their response to maprotiline: depressed mood, suicidal tendency, insomnia, retardation and feelings of guilt all improved in more than 50% of the treated patients. Furthermore there is no need for a hypnotic when maprotiline is prescribed at night. In maprotiline overdosage the first symptoms of intoxication arise after one or 2 hours. The clinical condition is dominated mainly by neuromuscular symptoms, motor unrest, muscular twitching, tremor, ataxia, convulsions, vertigo, hallucinations, confusion, drowsiness and mydriasis; and disturbances of consciousness have also been encountered (Goodman and Gilman, 1970). Initial hyperreflexia is subsequently followed by hyporeflexia. The symptoms of intoxication are intensified after concurrent ingestion of alcohol, chlorpromazine, catecholamines, mono-amine oxidase inhibitors, and tricyclic antidepressants. Maprotiline hydrochloride is derived from the earlier tricyclic structures and is one of the dibenzobicyclo-octadienes; it possesses an ethylene bridge across the central ring and thus is designated a tetracyclic compound.

Maprotiline hydrochloride inhibits uptake of catecholamines at the neural membrane and also antagonizes the action of serotonin and acetylcholine (Goodman and Gilman, 1970).

It produces convulsions in overdosage. These are best treated with diazepam (Mathews, 1971). However, in both these cases, maprotiline caused epileptic fits when taken in therapeutic dosage.

References

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Address for reprints: Dr Peter Marks, Lecturer in Medicine, King's College Hospital, London.