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Tardive Dystonia
The Benefits of Time

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Tardive dystonia is a rare movement disorder. We outline the development of tardive dystonia in a young schizopohrenic, and demonstrate the importance of applying a double-blind, placebo-controlled, cross-over trial of any putative successful treatment.

Tardive dystonia, first described by Keegan & Rajput (1973), is rare. In a comprehensive compilation of 40 cases (Burke *et al*, 1982) males predominated, age of onset was younger than for tardive dyskinesia, and response to treatment was poor. Tardive dystonia produces more severe functional handicap than tardive dyskinesia (Gimenez-Roldan *et al*, 1985). Case reports have suggested response to tetrabenazine, trihexphenidyl, and bromocriptine (Burke *et al*, 1982; Wolf & Koller, 1985; Luchins & Goldman, 1985), but there is no consensus on treatment. We outline the development and management of severe tardive dystonia in a schizophrenic patient.

Case report

This male patient was diagnosed as having schizophrenia in 1980, aged 20 years, on presentation with a three-month history of incongruity of affect, thought disorder, delusions of self-reference, and persecution and thought insertion. He was born prematurely and had two anoxic episodes shortly after birth. At nine months, epilepsy developed which was treated with phenobarbitone until the age of 12 years, since when he has only had occasional fits. He responded well to chlorpromazine, but developed pseudo-Parkinsonism, alleviated by orphenadrine. He remained on chlorpromazine (50 mg t.i.d.) and orphenadrine (50 mg t.i.d.) for the next four years, until relapsing in July 1984, when, in addition, he commenced fluphenazine decanoate (25 mg i.m.) every two weeks.

In February 1985 his family noticed excessive tongue movements. A reduction in chlorpromazine dose did not improve this. In April 1985 orphenadrine was increased to 100 mg t.i.d., followed by marked deterioration. The dyskinetic tongue movements were now associated with facial grimacing, writhing movements of hands and arms, and jerky movements of the neck to the left. In August 1985 all medication was discontinued; marked dystonia developed. His neck was pulled painfully and almost constantly to the left. There was frequent, sustained grimacing, affecting particularly the lower facial muscles on the left side, and also persistent protrusion of his tongue. A compensatory movement of the right hand up to his chin occasionally occurred. Severe functional handicap occurred, with difficulties in eating, drinking, talking, and walking. At that time his movements were thought to be due to hysteria.

However, his movements persisted, and in December 1985 he was first referred to one of us (SJC), and commenced diazepam (10 mg b.d.) and tetrabenazine (25 mg b.d.), with mild, sustained improvement in the choreic limb movements and dystonia. Wilson's disease was excluded, computerised tomography was normal, and EEG revealed a focus of left temporal spike waves. After three weeks diazepam was stopped, but there appeared to be a paradoxical response to tetrabenazine. The neck dystonia improved when the dose of tetrabenazine was increased, but this was limited by development of marked sialorrhoea. Reduction in dose of tetrabenazine or addition of orphenadrine exacerbated both dystonia and dyskinesia. In May 1986, because of failure to see further improvement, propranolol (160 mg q.i.d.) was commenced, in addition to tetrabenazine (12.5 mg *mane*, 25 mg *nocte*), with an apparent marked improvement in both types of abnormal movement. To assess the efficacy of propranolol more rigorously, we began a double-blind, cross-over study, comparing it with placebo.

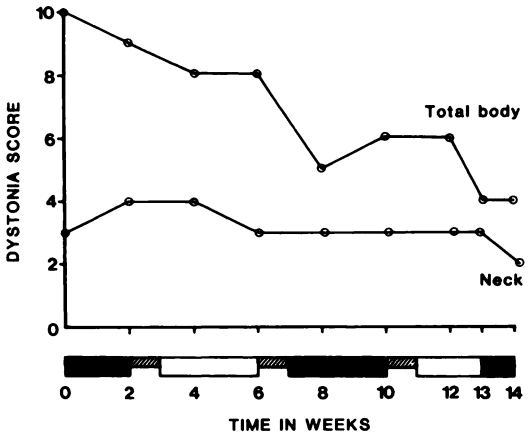

FIG. 1. The scores for dystonic movements as assessed by the modified AIMS. Medication during the double-blind cross-over study is indicated on the horizontal axis. Tetrabenazine was continued during the study. (■ propranolol; □ placebo; ▪ cross-over.)

Double-blind cross-over study

Treatment alternated between matching capsules of propranolol (160 mg q.i.d.) (Imperial Chemical Industries, PLC) and placebo capsules (q.i.d.) for varying periods of up to three weeks, with an intervening week, during which the dose of propranolol was gradually increased or reduced (see Fig. 1). The patient remained on tetrabenazine (12.5 mg *mane*, 25 mg *nocte*) throughout. Mental state and extrapyramidal symptoms (EPS) were rated fortnightly, blind to medication (by MMD), using respectively the Manchester scale (Krawiecka *et al*, 1977) and the Simpson & Angus (1970) scale. A fortnightly video recording was made of his movements, and at the end of the 14-week study the videotapes were shown in random order, and rated blind for date by two raters (SJC and DJK) who reached an agreed rating for dyskinesia and dystonia. Tardive dyskinesia was assessed using the Abnormal Involuntary Movements Scale (AIMS; National Institute of Mental Health, 1976) and tardive dystonia using a modified AIMS (see Appendix). During the study no change was noted in clinical symptoms or ratings of EPS or tardive dyskinesia. Dystonia ratings are shown in Fig. 1.

Discussion

This case demonstrates how functionally handicapping tardive dystonia can be, and how

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increase in dose of anticholinergic medication may precipitate it. This paradoxical response, compared with that for acute dystonia, is akin to the pattern seen in other tardive movement disorders, such as tardive dyskinesia and tardive akathisia (Braude & Barnes, 1983). The earliest sign in this patient was jerking movements of the neck, and this has been reported for other dystonias. It should also be noted that his movements were initially thought to have an hysterical basis. Lesser & Fahn (1978) noted misdiagnosis of idiopathic torsion dystonia as hysterical conversion reaction in 37 of 84 patients.

The study does not demonstrate consistent change in dystonia scores with change from propranolol to placebo and vice versa. Although the greatest improvement occurred around weeks 7 and 8 following change from placebo to propranolol, deterioration occurred between weeks 8 and 10 during propranolol treatment. Further, the next greatest improvement was during a placebo phase (week 13). Change from propranolol to placebo never resulted in deterioration. Thus our initial clinical impression of marked improvement with propranolol was not borne out. It is perhaps worth emphasising that in uncommon disorders, placebo-controlled studies, in single cases, ought to be carried out more often to substantiate claims for dramatic response to certain treatments.

There is no doubt that during the initial period of treatment in 1986, before commencement of propranolol, tetrabenazine produced a partial improvement in the dystonic symptoms. It is impossible to be sure whether or not continuation of tetrabenazine was responsible for the gradual response seen during the study period, because improvement following the initial response to it had reached a plateau. Subsequently, we have been able to discontinue all medication, and have seen further gradual disappearance of the abnormal movements.

Appendix

The modified AIMS for dystonia consisted of assessing the patient for each of the seven body areas, as described on the AIMS for dyskinesia, and scoring from 0 to 4 for each area, depending on the severity of the dystonic movements. The same criteria of 'questionable', 'mild', 'moderate', and 'severe' were employed.

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