(which in all cases responded uneventfully to orphenadrine citrate). Patients treated with oral flupenthixol reported no side effects except for a tendency to early insomnia. Medication was therefore given in two divided doses in the morning and lunch-time, each combined with Valium 2 mg., and sleep returned to normal.

Twenty patients reported a good or excellent improvement in their symptoms—particularly in inertia, retardation and anorexia—within a fortnight of starting medication. We consider that our patients were chronically and unequivocally depressed, and as they had had a variety of previous unsuccessful treatments could hardly be regarded as 'placebo reactors'.

Our results, although uncontrolled, seem to support our previous suggestion that flupenthixol may prove an effective antidepressant; and its marked lack of side effects when given orally and the possibility of depot treatment in patients otherwise liable to take overdoses of drugs with suicidal intent would present considerable practical advantages. Other advantages would be the absence of dietary restrictions, the possibility of combining flupenthixol with tricyclic or MAOI antidepressants, and its use in depressive conditions in the elderly where the autonomic side effects of conventional tricyclic antidepressants are often tiresome and occasionally dangerous. No evidence of addiction or dependence was seen, although this is a theoretical possibility which would have to be borne in mind in any drug with such a clear mood-elevating effect. Caution would also be required in very severely depressed patients where the possibility of decreased sleep and increased drive would have obvious dangers. We feel that further controlled and comparative trials are indicated, and these are being planned.

PETER HALL.
JEAN COLEMAN.

*Powick Hospital,*
*Powick,*
*Worcester, WR2 4SH.*

REFERENCES

1. HALL, P., and COLEMAN, J. (1972). *Brit. J. Psychiat.*, **120**, 241–4.
2. REITER, P. J. (1969). *Brit. J. Psychiat.*, **115**, 1399.
3. MERSKEY, H. (1971). *Brit. J. Psychiat.*, **119**, 230.

## FLUPENTHIXOL AND THE OUT-PATIENT MAINTENANCE TREATMENT OF SCHIZOPHRENIA

DEAR SIR,

I am sure that my friend Dr. Carney will forgive me when I suggest that his letter on long-acting neuroleptics over-simplifies the situation (*Journal*, October 1972, **121**, 458). The reasons why patients discontinue these regimes or become lost from them are extremely complex. Dr. D. A. W. Johnson and myself have analysed a series of such defaulters, and the results are to be published shortly in *Psychological Medicine*. One thing which emerges clearly is that the presence of extrapyramidal or other side effects is only one of the factors concerned, and by no means the most important.

In our own experience with long-acting fluphenazine, which now extends over more than six years, we have experienced nothing like the degree of difficulty with side effects which Dr. Carney reports. Following his letter, I have looked at the last 300 patients who have come into the maintenance programme with fluphenazine decanoate. Of these, not more than six could have been regarded as having to discontinue the regime primarily because of extrapyramidal side effects. Even for some of these cases the situation was complicated by personality or social factors, without which treatment might have continued satisfactorily.

With further experience, we have found in our service that a much greater degree of flexibility is required in maintaining a regime of long-acting injections than had been thought necessary earlier on. If the dose of injections, the timing of injections and the prescription of anti-parkinsonian tablets are suitably adjusted, there are very few patients indeed who cannot be satisfactorily maintained on this regime. As far as the results are concerned, the preliminary figures from our sample already show a dramatic fall in the necessity for re-admission to hospital (1).

Like other colleagues, I find it difficult to understand Dr. Carney's strength of emphasis on depression as a complication in this form of treatment; I don't think there has been lack of clinical sensitivity on our part. In the whole of our experience with this programme, only three suicides have occurred, none of which could have been regarded as wholly due to a depressive reaction. Suicide in schizophrenia is a very much more complicated question than this, and one is more likely to reduce the rate by effectively treating schizophrenia than by withholding essential forms of medication. In fact, the MRC double-blind trial reported by Gaind at Montreal last May showed that only 10 per cent of the patients on fluphenazine decanoate injections required antidepressants compared with 14 per cent of those on placebo.

From the figures given by Dr. Carney, I cannot accept that he is reporting a lower rate of significant side effects than would be found with a well-supervised programme of fluphenazine depot injections. Although my own experience with flupenthixol is limited, I

understand that insomnia has already emerged as a significant complication with it. Also, Dr. Carney doesn't state which form of fluphenazine his figures relate to, and I think it is generally accepted that the decanoate shows a significantly lower rate of troublesome side effects than the enanthate.

Willingness to co-operate in a long-term treatment programme of this kind involves many issues, which go far beyond the actual pharmacological effects of the medication prescribed. Success depends to a large extent on managerial and information systems, which are at present still in their infancy. The Department of Health and Social Security has recently approved a research grant for a system of continuous monitoring to be developed in this area for vulnerable schizophrenics. I am sure that with further development in this direction pharmacological side effects will be seen in better proportion and will be found to be of much less overall significance than Dr. Carney has suggested.

H. L. Freeman.

*Hope Hospital,*
*Eccles Old Road,*
*Salford, M6 8HD,*
*Lancs.*

### Reference

1. Johnson, D. A. W., and Freeman, H. L. (1972). *The Practitioner*, **208**, 395–400.

## INTRAVENOUS DIAZEPAM IN DRUG-INDUCED DYSTONIC REACTIONS

Dear Sir,

In their recent paper under this title, Korczyn and Goldberg (*Journal*, July 1972, **121**, 75–77) speculated that *oral* diazepam might be an effective prophylaxis against the development of such reactions. We wish to report on the effect of intravenous and oral diazepam in a patient with a chronic movement disorder.

The patient is a 56-year-old Caucasian man who developed choreoathetotic movements in his right wrist in February 1970. Within six months the movements spread to his right arm, neck and face. The patient became bedridden and could not feed himself. The movements were not present during sleep. It was found that massage of his right temple would completely remove the movements; and so, in September 1970, he was started on thioridazine, 150 mg. by mouth each day, and benztropin, 2 mg. by mouth daily in divided doses. The movements had stopped at the time of his next clinic visit in December 1970, and he was returned to the care of his family physician.

In January 1971, chlorpromazine, 200 mg. by mouth in divided doses each day, was substituted for thioridazine by his physician. The abnormal movements gradually recurred, and progressed in severity over the next 2½ years. He was referred back to this hospital in July 1972. On admission he had marked head bobbing, a large amount of facial grimacing, and choreoathetotic movements in his left arm and both legs. Chlorpromazine and benztropin by mouth were discontinued. Phenobarbital, 60 mg. by mouth each day, had no effect on the movements. Benztropin, 2 mg. i.v., had no effect either.

In preparation for a pneumoencephalogram, the patient was given diazepam, 5 mg. i.v. His movements stopped as he went to sleep and remained markedly decreased on awakening. For 24 hours the patient was able to sit and feed himself unassisted. However, the movement disorder returned after that time. Diazepam by mouth, in a dose ranging from 10 to 30 mg. per day over a 10-day period, had no further beneficial effect.

Bianchine and Bianchine (1970) noted an immediate cessation of torticollis after i.v. diazepam in a patient unaffected by i.v. diphenhydramine. This effect lasted several hours at most in their patient, but was reproduceable. Long-term benefit was afforded by oral diazepam in a modest dose. High dose of oral diazepam led to significant improvement in one patient with dystonia musculorum deformans, in whom a single i.v. dose produced a dramatic change lasting a few days (Keats, 1963). However, other workers have not been impressed by any long-term benefit from oral diazepam in this chronic movement disorder (Barrett *et al.*, 1970; Chase, 1970).

William Heffron.

Michael P. McQuillen.

*Department of Neurology,*
*University of Kentucky Medical Center,*
*Lexington, Kentucky 40506, U.S.A.*

### References

Barrett, R. E., Yahr, M. D., and Duvoisin, R. C. (1970). 'Torsion dystonia and spasmodic torticollis—results of treatment with L-dopa.' *Neurology*, **20** (part 2), 107–13.

Bianchine, J. R., and Bianchine, J. W. (1970). 'Case report. Treatment of spasmodic torticollis with diazepam.' *Southern med. J.*, **64**, 893–4.

Chase, T. N. (1970). 'Biochemical and pharmacologic studies of dystonia.' *Neurology*, **20** (part 2), 122–30.

Keats, S. (1963). 'Dystonia musculorum deformans progressiva. Experience with diazepam.' *Dis. nerv. Sys.*, **24**, 624–9.