regional pharmacists and their staffs and specially Mrs M. J. Roberts of the DHSS who went to such great trouble to let me know the number of doses of the drugs prescribed. I am also indebted to the Schizophrenia Association of Great Britain for paying for the postal and secretarial expenses involved.

ALAN C. GIBSON

St Ann's Hospital,
Canford Cliffs,
Poole, Dorset

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TARDIVE DYSKINESIA AND DEPOT FLUPHENAZINE

DEAR SIR,

There have been several reports of an increase in tardive dyskinesia with depot fluphenazine treatment (Chouinard *et al*, 1977; Gardos *et al*, 1977; Smith *et al*, 1978). The report by Gibson (*Journal*, October 1978, **132,** 361–5) is an important prospective study which shows a progressive increase in the prevalence of tardive dyskinesia in chronic schizophrenic patients maintained on depot fluphenazine and flupenthixol.

Based on our studies with fluphenazine plasma concentrations following depot injections of fluphenazine decanoate (Nasrallah *et al*, 1978) I would like to propose that the increased occurrence of tardive dyskinesia with depot fluphenazine treatment might be related to the wide fluctuations in plasma concentrations of fluphenazine after an injection of the depot. Our findings show that after a dose of 50 mg i.m. of the decanoate ester in schizophrenic patients with or without ongoing cycles of depot injections, daily fasting plasma levels fluctuated widely between trace and over 100 ng/ml, suggesting an irregular release pattern of fluphenazine from the depot site. For several patients, no plasma fluphenazine could be detected for one or more days after the injection, and higher values (usually between 3–16 ng/ml) could be measured on other days. Different patients achieved different peaks at different times, and no intra- or inter-patient kinetic pattern could be observed.

Given the model of dopaminergic receptor hypersensitivity following the withdrawal of neuroleptic drugs (Tarsy and Baldessarini, 1974), it is possible that chronic fluctuations in fluphenazine plasma concentrations with depot maintenance could have the effect of 'repeated withdrawals', resulting in 'withdrawal' dyskinesia, which may or may not be reversible.

With orally administered neuroleptics, the greatest fluctuation in plasma concentrations occurs with once-a-day dosage schedules. Jeste *et al* (1977) reported that four-times a day administration of chlorpromazine masked the symptoms of tardive dyskinesia, whereas these were clinically evident with once-a-day administration of the same total daily dose.

Obviously, the above 'hypothesis' needs validation with well designed prospective studies, since the implications are important for better maintenance treatment of chronic schizophrenic patients.

HENRY A. NASRALLAH

Department of Psychiatry,
University of California, San Diego,
La Jolla, California 92093, USA

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CANCER IN THE LONG-STAY HOSPITALS

DEAR SIR,

I read with great interest Dr Rice's letter (*Journal*, January 1979, **134,** 128), in which he states that he cannot recall during 35 years of psychiatric practice a single case of a chronic schizophrenic patient dying of bronchial carcinoma.

In our recent survey of 1,125 mentally handicapped patients who died during the past 40 years in four