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The effect of chlordiazepoxide and fluphenazine on critical flicker frequency

SIR,—The critical flicker frequency (CFF), which is the rate at which a light of increasing intermittency first appears to be flickering, has for many years been used as a sensitive test of central nervous system activity (Landis, 1954; Turner, 1968). CFF not only varies with age and in neurological disorders (Misiak, 1967) but is affected by centrally acting drugs. Earlier studies had used large doses of oral agents, but it has now been shown (Turner, 1968) that single therapeutic doses of several compounds including phenmetrazine, amphetamine, chlorpromazine and amylobarbitone may alter the CFF, and so it seems reasonable to regard measurement of CFF as a potential screening test for centrally acting drugs.

We have now compared chlordiazepoxide and fluphenazine hydrochloride which were shown recently (Rickels, Raab & others, 1968) to be effective in the management of anxiety states. Chlordiazepoxide, 10 and 20 mg, in two divided doses, 4 hr apart, and 2 mg of fluphenazine hydrochloride in a single dose were compared with placebo in a double blind trial. A latin square design of administration was used in eight young volunteers of either sex. CFF, both ascending and descending, was measured before, and at 2 hrly intervals for 8 hr after ingestion. The apparatus and technique were described by Turner (1968).

The results were submitted to an analysis of variance which revealed no significant difference between the two drugs and placebo. However, as has been consistently found with this method, a significant ($P < 0.001$) fall of CFF was observed over the day (Turner, Sneddon & Smart, 1967).

These results are in accordance with those of Ideström & Cadenius (1963) who found that while a single dose of 20 mg chlordiazepoxide did not significantly reduce CFF, a 40 mg dose did so. Austen, Gilmartin & Turner (1968) have measured the action of chlordiazepoxide (10 mg) on visuomotor co-ordination, visual field, extraocular muscle balance and colour matching ability and found no significant change. Although fluphenazine hydrochloride, 1 mg, has been shown not to alter CFF (Turner, 1966) it is now recommended in doses of 2 mg daily in the management of anxiety states and therefore requires re-evaluation.

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