TABLE 2
Incidence of Delirium Tremens and Convulsions

DISTURBANCE	DRUG GROUP					
	CHLORDIAZEPOXIDE (N = 103)	CHLORPROMAZINE (N = 98)	HYDROXYZINE (N = 103)	THIAMINE (N = 103)	PLACEBO (N = 130)	TOTAL (N = 537)
Delirium tremens	1	4	2	4	7	18
Convulsions	1	9	6	7	8	31
Delirium tremens and convulsions	0	3	2	0	1	6
Total (percent in parentheses)	2 (2)	16 (16)	10 (10)	11 (11)	16 (12)	55 (10)

suffered convulsions after the first day of treatment. In eight of the 12 chlorpromazine patients who had seizures, the seizures occurred after the first day and as late as the sixth day of treatment.

The total incidence of delirium tremens and convulsions in the patient population is shown in table 2, which includes those patients with convulsions who were not terminated early.

What about the approximately 400 patients who stayed the course? In general, the scales employed indicated that all five treatment groups improved rapidly, the larger changes occurring in the first two days. Individual symptoms appeared to respond more readily to one or another of the treatments, but no treatment method had an over-all consistent superiority. In fact, the placebo group appeared to fare (symptomatically) as well as any of the others.

Discussion

The state resulting from acute withdrawal from prolonged use of excessive amounts of alcohol is attended by an appreciable risk of serious symptoms, the development of delirium tremens, and a moderately high mortality rate. The world literature abounds with conflicting reports on the effectiveness of numerous treatment regimens. The advent of the phenothiazines led to their extensive use in this condition. Early reports were extremely favorable, as is usual in the case of new agents. More recent reports, however, have been quite guarded as to both the efficacy and safety of the phenothiazines in this regard.

The opinion has recently been expressed that no adequate data have yet been reported to prove that any of the newer psychoactive agents is effective in preventing the development of delirium tremens during the withdrawal state.

With these issues in mind the VA embarked on a double-blind comparative evaluation of four of the commonly employed treatments of the alcohol withdrawal syndrome. As in other studies of this state, most patients in all five treatment groups (including placebo) improved rapidly, the rate of change appearing greatest in the first two days of treatment. The success or failure rates in this study must be keyed to the rates of occurrence of the two most common and serious developments in this syndrome: convulsions and delirium tremens. Chlordiazepoxide was associated with the best outcome in both these disturbances; chlorpromazine, with the worst.

With respect to seizures, our finding confirms the early report of Kaim and Rosenstein(10) of the anticonvulsant action of chlordiazepoxide. The finding that patients receiving chlorpromazine incurred the most seizures confirms the reports of Bonafede(2), Fabisch(3), Sainz(14), Barrett(1), and Ticktin and Schultz(16).

Chlordiazepoxide also appeared to offer substantial protection against the development of delirium tremens during alcohol withdrawal. In a recent study Greenberg and Pearlman(7) reported that dreaming was suppressed during periods of increasing blood levels of alcohol. Withdrawal led to an increase in stage 1 rapid eye movement sleep, with 100 percent stage 1 found just before the development of delirium tremens.