

FRUSEMIDE SUPPRESSING AUDIOGENIC SEIZURE

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Sir,

Frusemide has been reported to produce ototoxicity (3). As reported (2) the impairment in hearing due to ethacrynic acid and frusemide is associated with damage of the cochlear-neuronal hair cell structure and function which later was found to be due to the reversal of sodium/potassium ratio in the endolymph with the loss of electrolytes from the endolymph of the cochleovestibular apparatus (1). In view of this the ability of frusemide to suppress audiogenic seizure in rat was tested.

Audiogenic seizure was induced in rat by using Audiogenic-seizure Apparatus (Techno). The apparatus is a box of 18" x 18" x 18" having 2 electric bells, a lid and glass window. The high volume sound of 2 electric bells for one min produced seizure in rat.

Ten albino rats weighing 110–150 g each were used. These were selected out of the stock after having shown susceptibility to audiogenic seizure when exposed to the 2 bell sound for one min in the preliminary testing. The seizure response was characterized by two components, initial running and jumping followed by clonic and tonic convulsion. The time of onset of seizure components was recorded at 0 hr in all the 10 rats and then again after a rest of 180 min in the five rats (control group). The remaining 5 rats were treated with frusemide (Lasix ampule 10 mg/ml) immediately after first testing and were tested for seizure again after 180 min of initial testing.

The observations are presented in Table I.

TABLE I : Audiogenic seizure components in albino rats.

Group	Audiogenic seizure components. Time of onset of running and jumping in sec.	Time of onset of clonic/tonic convulsion in sec.
A Control (1 to 10) 10 rats.	31	41
B Control (1 to 5) 5 rats of A after 3 hr.	36	43
C Frusemide treated 20 mg/kg (6 to 10) 5 rats of A after 3 hr.	54 (in 2 rats) No seizure activity in 3 rats.	71 (in 2 rats)

It appears that frusemide on acute administration elevates the threshold to audiogenic seizure in some rats and completely suppresses the seizure in other rats.

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