

Letter to the Editor

ETHYLENEDIAMINETETRAACETIC ACID TETRACYCLINE AND TOXICITY OF BARIUM CHLORIDE AND SODIUM FLUORIDE

Sir,

Barium carbonate is used to kill rodents and sodium fluoride (NaF) to destroy cockroaches (2) which commonly abound in kitchen and the drugs are occasionally involved in poisoning in man and animals. It is well known that ethylenediaminetetraacetic acid (EDTA) and tetracycline chelate certain divalent metal ions like calcium (1). Since barium, like calcium, belongs to the second group in the periodic table of Mendeleeff, an *in vivo* study was undertaken to see if EDTA and tetracycline acted as antidotes of barium. In addition, the efficiency of tetracycline in acute fluoride poisoning was also tested.

All drugs were dissolved in distilled water and injected intraperitoneally to adult albino mice (16-40 g). Mortality and average survival time with barium chloride ($\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$) and NaF were ascertained as also the safe doses of tetracycline hydrochloride and disodium EDTA. Some combinations were injected after *in vitro* incubation for 6-72 hr at 8-32°C.

Results (Table I) indicated that EDTA and tetracycline did not act as antidotes of BaCl_2 nor did tetracycline of NaF.

TABLE I

Acute toxicity of BaCl_2 and NaF in mice. At 200 mg/kg dose, EDTA and tetracycline were well tolerated by the mice

Drug and dose mg/kg	EDTA mg/kg	Tetracycline mg/kg	No. of mice used	No. of mice died	Average survival time in min (range)	
BaCl_2	20	..	3	nil	..	
	40	..	5	nil	..	
	50	..	10	6	48 (15-112)	
	75	..	20	16	31 (15-95)	
	75*	100*	..	8	8	32 (13-60)
	75*	200*	..	8	8	28 (10-60)
	75	..	200	15	11**	70 (8-50)
	75*	..	200*	7	6***	55 (17-54)
NaF	37.5	..	10	2	38 (23-53)	
	75	..	7	5	18 (13-30)	
	112.5	..	4	4	23 (14-36)	
	37.5	..	200	3	26 (18-35)	
	37.5*	..	200*	10	3	8 (15-20)
	75*	..	200*	9	9	30 (11-60)

*Drugs injected after *in vitro* mixing and incubation.

**Two more mice were found dead after 5 and 24 hr.

***One more mouse was found dead after 24 hr.

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TABLE I

TABLE I
EDTA and tetracycline did not act as antidotes of NaCl

Group	No. of mice	No. of mice	EDTA	NaCl
1	10	10	200*	200*
2	10	10	200*	200*
3	10	10	200*	200*
4	10	10	200*	200*
5	10	10	200*	200*
6	10	10	200*	200*
7	10	10	200*	200*
8	10	10	200*	200*
9	10	10	200*	200*
10	10	10	200*	200*
11	10	10	200*	200*
12	10	10	200*	200*
13	10	10	200*	200*
14	10	10	200*	200*
15	10	10	200*	200*
16	10	10	200*	200*
17	10	10	200*	200*
18	10	10	200*	200*
19	10	10	200*	200*
20	10	10	200*	200*
21	10	10	200*	200*
22	10	10	200*	200*
23	10	10	200*	200*
24	10	10	200*	200*
25	10	10	200*	200*
26	10	10	200*	200*
27	10	10	200*	200*
28	10	10	200*	200*
29	10	10	200*	200*
30	10	10	200*	200*