

THE EFFECT OF PALUDRINE ON GASTRIC SECRETION IN MAN

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In order to investigate the effect of paludrine on human gastric secretion the following experiments were carried out on 9 students. Each subject, who had not taken food for at least four hours, had his stomach emptied by aspiration. He was then given a meal of 450 ml. gruel, and samples of gastric contents were withdrawn every 15 minutes for 2 hours. The hydrochloric acid content of each sample was measured by titration against standard sodium hydroxide using thymol blue as indicator. Three control experiments were first carried out on each subject in order to obtain his normal response.

Paludrine was given by mouth, either as tablets or in cachets, 2 or 4 hours before the test meal. The only toxic effect was slight nausea in four subjects after the higher doses, and this passed off before the meal was given. Results were assessed as follows (see Table I). The amount of

HCl in each sample of gastric juice, expressed as ml. *N*/10 HCl per 100 ml. juice, is set out in each column, and the mean of these figures is shown at the bottom of the column. Mean figures of the three control experiments are given in column (v). The results after paludrine are given in columns (vi) and (vii) and can be compared with those of the controls.

Table II shows the results obtained on each student in this way. It can be seen that when paludrine was given 4 hours beforehand (columns (vi) and (vii)) there was usually no effect. In one case, student J, the acidity was markedly increased. When, however, 0.9–1.0 g. paludrine was given 2 hours before the test meal (columns (viii) and (ix)) there was a decrease in the gastric acidity of every subject but one. The mean figure for the acidity of the samples when this dose of paludrine was given two hours before the test meal was 23.0 ml. per 100 ml. juice. This is 60 per cent of the mean figure of the control samples (38.1 ml.).

TABLE I

STUDENT H

The figures in columns (ii)–(vii) are ml. *N*/10 HCl per 100 ml. gastric juice

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Min.	Controls			Mean of controls	Paludrine	
	1	2	3		0.9 g. 4 hr. before	1.0 g. 2 hr. before
15	0	0	8	2.8	8	8
30	23	15	40	26.0	28	22
45	43	58	40	47.0	50	48
60	67	80	80	76.0	83	65
75	80	78	50	69.3	100	53
90	73	73	58	68.2	80	42
105	69	32	85	62.0	53	25
120	43	—	57	50.0	65	37
Mean	49.7	48.0	52.2	50.1	58.4	37.5

TABLE II

EFFECT OF PALUDRINE ON GASTRIC SECRETION OF HCl
The figures are ml. *N*/10 HCl per 100 ml. gastric juice

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)
Sub-ject	Controls			Mean of controls	Dose of paludrine Time before meal			
	1	2	3		0.3 g. 4 hr.	0.9 g. 4 hr.	0.9g. 2 hr.	1.0g. 2 hr.
A	20	35	10	22	28	26		8
B	45	45	30	41	37	45		26
C	28	39	26	32	43		13	27
D	52	33	33	39		29		25
E	46	71	73	64	37	82		47
F	18	41	46	37	36	13		17
G	28	49	17	33			14	11
H	49	48	52	50		58	37	
J	25	26	24	25	51	54		28
Mean	34.5	43.0	34.5	38.1	38.6	43.8		23.0

An analysis of variance of the figures in Table II shows that this reduction of acidity was highly significant ($P < 0.01$) by the variance-ratio test.

SUMMARY

1. The effect of paludrine on gastric acidity has been investigated by carrying out test meals on 9 subjects.
2. A significant reduction in acidity occurred

when 0.9–1.0 g. paludrine was given by mouth 2 hours before the test meal.

We are grateful to the nine students who volunteered to act as subjects in these experiments.

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