

## LETTERS TO THE EDITOR

**Banana and Experimental Peptic Ulcer**

SIR,—Recently attention has been drawn by Sanyal, Das, Sinha and Sinha (1961) and Sinha, Sanyal and Sinha (1961) to the beneficial effects of ripe banana in the prevention of histamine-induced gastric hyperacidity, ulcerations and perforations in guinea-pigs. These observations were confined to acute types of peptic ulcers. They also reported a reduction in histamine-induced acidity when banana extract was applied on the gastric mucosa, and this was considered to be due to the high 5-hydroxytryptamine (5-HT) content of banana (West, 1958; Waalkes and others, 1958).

For the present study, chronic gastric ulcers were produced in adult guinea-pigs by phenylbutazone. This drug has been reported to produce various types of gastric complications, including ulcerations, perforations, and haemorrhages, in man (Kirsner, 1957). In experimental animals, oral and parenteral administration of phenylbutazone has also been found to produce peptic ulcerations (Watt and Wilson, 1959; Zaidi, Singh and Bajpai, 1961).

TABLE I  
EFFECT OF BANANA AND ALUMINIUM HYDROXIDE ON PHENYLBUTAZONE INDUCED PEPTIC ULCERS

Drug	Dose/kg.	No. of experiments	Ulcer present	Survival in days, mean $\pm$ s.e. (range)	Other features
Phenylbutazone	100 mg.	40	36 (90 per cent)	21 $\pm$ 8 (8-40)	Haemorrhage in 4. Adhesion in 5. Perforations in 3. Acute dilatation in 2
Phenylbutazone + Banana powder	100 mg. 1 g.	24	14 (48.3 per cent) P < 0.01	24 $\pm$ 9 (7-42) P > 0.05	Ulcers were either healed or were attempting to heal as shown by more fibrosis and thickening
Phenylbutazone + Aluminium hydroxide	100 mg. 1 g.	14	8 (47.1 per cent) P < 0.05	18 $\pm$ 5.94 (7-29) P > 0.05	Same as above

In the present series, phenylbutazone, 100 mg./kg., as a 10 per cent suspension was administered daily with the help of a fine catheter orally to the adult guinea-pigs. Unripe banana was selected for the present study as it was reported to contain the maximum amount of 5-HT. The pulp was sun-dried, powdered and administered daily in the dose of 1 g./kg. Control experiments were made with a proprietary preparation of aluminium hydroxide (Aludrox) (1 g./kg.). Post-mortem and histological examinations were made whenever any animal died during the study. The results are summarised in Table I.

The results clearly indicate that banana helps in the prevention and healing of the phenylbutazone induced ulcers. The results not only compare well with the antacid, but the results are highly significant. The life span of the guinea-pigs under phenylbutazone treatment was not significantly altered by either banana or antacid treatment but it has to be remembered that the deaths after phenylbutazone might also arise from other toxic effects of the drug.

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February 1, 1963

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## LETTERS TO THE EDITOR

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