Studies on Almonds in Ulcer Therapy

J.

Kleeberg

Jerusalem

The folklore custom of eating dried sweet almonds against pyrosis led to systematic studies on almond purée, milk, oil and on benzaldehyde.

Almond milk is a colloidal fluid containing a water soluble vegetable protein, countless fine oil droplets, carbohydrates vitamins and minerals. In selected patients only, it significantly diminishes the concentration of hydrochloric acid but does not change peptic activity.

Almond purée has the same composition but contains all those constituents in greater concentration. Its effect is more marked and constant both in vitro and in vivo. The pH of 1.5 of artificial or natural gastric juice is raised to pH 4.5 within a period of minutes, thus diminishing peptic activity. In the stomachs of ulcer patients and dogs, the concentration of hydrochloric acid (after a testmeal or histamine) is reduced to a third, and peptic activity is also significantly inhibited.

Almond oil markedly diminishes the concentration of hydrochloric acid in human and dog stomachs after stimulation. Peptic activity in vitro and in vivo is not significantly influenced.

Benzaldehyde, the main aromatic principle of sweet almonds, does not alter the pH or hydrochloric acid concentration in human and dog stomachs. It significantly inhibits in vitro and in vivo peptic activity.

A daily intake of 30 to 60 grams of dried sweet almonds over periods even of weeks did not lead to noticeable side effects. Almond purée and, to a lesser degree, almond milk relieved pyrosis in the majority of cases, and ulcer pain was often benefited.

Only a partial explanation of the above effects is possible. Al-

506

Kleeberg

Congress 374

mond protein and oil provide a protective film over the mucosa. This protein buffers hydrochloric acid. The oil on reaching the upper part of the small intestine inhibits gastric secretion and motility by hormonal regulation. The mode of inhibition of peptic activity by benzaldehyde – whether direct, humoral or neurogenic – is unknown. It may be assumed that the vitamins and certain proteins in almonds play a role too in the healing of gastric hemorrhagic or inflammatory processes.

(8) Sweet dried almonds, mashed or chewed, are an effective long lasting anti-acid and anti-peptic substance against ulcer, especially against hyperacid duodenal ulcers. The material is harmless and contributes to the nutritional requirements of a strict diet. This natural product permits combination with any drug or pharmacon which an ulcer patient may need in his individual therapeutical program.

Hunt, J. N.: Gastroenterologia 86, 506, 1956

The Influence of Low Concentrations of Acid in Test

Meals on Gastric Digestive Activity in Patients
with Duodenal Ulcer

By J. N. HUNT (London)

The gastric responses to test meals of 750 ml. of a solution of glucose (100 g. per litre) and a solution of glucose plus 20 mEq. of hydrochloric acid per litre were studied by a single withdrawal technique in 27 medical students and in 11 patients with duodenal ulcer.

Emptying was slowed by the addition of acid, particularly in subjects secreting small amounts of acid in response to the meal without acid. This confirms the findings of Shay (Bull. N.Y. Acad. Med. 20, 264, 1944). The degree of slowing of gastric emptying produced by the acid in the meal in patients with duodenal ulcer was small and comparable to that produced in normal subjects with similar secretory responses.