

## PROTECTIVE EFFECTS OF HONEY AND 25 PER CENT DEXTROSE ON STRESS INDUCED ULCERS IN RATS

MUSTAFA YANDI\*

It is well known that hyperosmolar dextrose and other nutrients have protective influence against stress ulcer (57). It is furthermore argued that the tubal feeding prevents ulceration by increasing the energy substrates in the mucosa rather than the neutralization of the gastric acid. It has been shown that on the proximal areas of the stomach, the glycogene stores are low and therefore they are particularly prone to stress ulceration (8). Since no report concerning such influence of honey on the gastric mucosa is observed experiments were performed to elucidate this matter. The study reported here was done on 30 rats divided into three groups. Each group received 10 cc of serum physiologic, 25% dextrose or 25% dextrose or 25% honey through nasogastric tube when they were under the cold-restraint stress. At the end of the fourth hour, I have done on investigation on the rats on four parameters. These were macroscopic and microscopic evaluations on the gastric mucosal, levels, of blood sugar and pH levels on the stomach wall of the rats. Of these, microscopic evaluations in the gastric mucosa, levels of blood sugar and pH levels on the stomach wall there were not significant differences between groups statistically, but there were on macroscopic evaluations. Macroscopic lesions occurred 2.2 +, 1.2 + and 0.7 + grades in the groups that were given serum physiologic, 25% dextrose and honey, subsequently ( $p < 0.05$ ).

There is not any relation between the prophylactic effects of feeding by tube and levels of blood sugar and pH levels on the stomach wall. These situations were not throughout the related literature and also seen in this study (1,2,6).

Hyperosmolar dextrose, applied intragastrically, has a preventive effect by providing direct energy to the gastric mucosa (2,9). In hemorrhagic shock, ulcers are seen on the areas of the gastrointestinal tract, where the glycogene stores are insufficient (3,8). The superiority of the

prophylactic effectiveness of honey on dextrose in stress ulcers was found by macroscopic evaluations in my study. Fructose which consists of 32% of honey (5), may be effective in protection. The absorption rates and mechanisms of monosaccharides are different in the gastrointestinal mucosa. The absorption rate of fructose is half of that of glucose. The absorption of glucose by active transport, but the absorption of fructose happens only by diffusion and does not require metabolic energy (4). So, the fructose in honey may be protecting the mucosa, better than dextrose and other nutritional supplements, by being better absorbed through the gastric mucosa which is low in energy stores and ATP production.

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\* From the Department of Surgery, Karadeniz Technical University, Faculty of Medicine, Trabzon, Türkiye.