

Abstract

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DETERMINATION OF THE GASTRIC EMPTYING TIME AND EFFECT ON BLOOD SUGAR LEVELS AFTER CONSUMPTION OF COCONUT WATER, SUGARCANE JUICE, AND PLAIN WATER AMONG HEALTHY VOLUNTEERS

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Objectives:

In Enhanced Recovery After Surgery (ERAS) fasting protocol, a carbohydrate loading of 12.5% glucose in maltodextrin form is recommended 2 hours prior to surgery as part of its nutritional preparation to prevent insulin resistance. However, this solution is not available yet in the Philippines. In this study, we aimed to determine the efficacy of coconut water and sugarcane juice, both locally and readily available, as alternative carbohydrate drinks.

Methods:

After approval from the Research Ethics and Review Committee, 45 healthy adult volunteers were enlisted to ingest coconut water, sugarcane juice, and plain water (control) for 3 separate days. Before and after ingestion of each drink, both the gastric emptying time and blood glucose levels were measured.

Results:

Majority of the gastric contents of the participants were emptied within 60 minutes in coconut water group (64.44%), 90 minutes in sugarcane juice group (44.44%), and 30 minutes in the control group (55.56%). Overall, the gastric contents in these 3 groups returned to baseline levels (< 25ml) within the 120-minute mark. The 2-hour postprandial blood glucose levels of these 3 solutions remained within the normal reference range (< 140 mg/dL): coconut water (89 ± 106 mg/dL), sugarcane juice (94 ± 108 mg/dL), and plain water (90 ± 107 mg/dL).

Conclusions:

Both coconut water and sugarcane juice conform to the safety standard of presenting a half-life of no more than 120 minutes from consumption, therefore, they may be safely given preoperatively affording protection against insulin resistance with minimal risk for bronchoaspiration during anesthesia.

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