Original Article

Effect of ingestion of ice cream after high-intensity intermittent exercise on insulin secretion in male athletes

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ABSTRACT

【Aim】
The purpose of this study was to examine the effect of the ingestion of ice cream, compared with the effect of a carbohydrate-electrolyte beverage, after high-intensity intermittent exercise on insulin secretion.

【Methods】
Eight male subjects ingested a trial food (ice cream: ICE) or a control drink (carbohydrate-electrolyte beverage: CON) immediately after completing high-intensity intermittent exercise and then rested in a sitting position for two hours. The quantity of ICE and CON was adjusted for each subject so that each subject consumed 1.2 g of carbohydrates per kilogram of body weight. Glucose-dependent insulinotropic polypeptide (GIP), blood glucose and insulin secretion were measured immediately post-exercise and at 30, 45, 60 and 120 min after the ingestion of ICE or CON.

【Results】
The GIP levels at 30-120 min were significantly higher ($p < 0.01$) in the ICE group than in the CON group. The blood glucose levels at 30-60 min were significantly lower ($p < 0.05$) in the ICE group than in the CON group. The insulin levels at 30-45 min were also significantly lower ($p < 0.05$) in the ICE group than in the CON group.

【Conclusion】
The results of this study suggested that the effect of the ingestion of ice cream on insulin secretion after high-intensity intermittent exercise was less than that of a carbohydrate-electrolyte beverage.

Keywords: GIP, blood glucose, core temperature