

Soluble fiber rich diets decrease the glycaemic indices

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Objective

Determination of the glycaemic index (GI) of basic foods such as cooked white rice ('Bg-11-11'), brown rice ('At- 402'), parboiled rice ('Mottaikarupan'), 'Pittu' and 'string hopper', tubers such as boiled potato (*Solanum tuberosum*) and cassava (*Manihot esculenta*), legumes such as boiled green gram (*Vigna radiata*) and chick pea (*Cicer arietinum*), bakery products such as wheat flour bread, normal bun, butter cake, hard bun and rusk and fruits such as 'Kathali', 'Kappal', 'Itharai' plantain varieties, jack fruit and papaya.

Methods

Healthy volunteers (22 Nos.) of 24.62 (± 1.43) years, 63.42 (± 10.50) kg body weight, 1.70 (± 0.07) m height and 21.90 (± 2.75) kg m⁻² body mass index were selected with their written consent. After overnight fasting, 75g glucose and each test food containing 75g digestible carbohydrate were administered at different instances and blood glucose levels were measured half hourly for two hours. The GI values were calculated and analyzed by Randomized Complete Block Design using SAS analytical package.

Results

'Pittu', 'string hopper', green gram, chick pea, hard bun, rusk, three plantain varieties and papaya are low GI diets (GI<55). Cooked white rice, brown rice, parboiled rice, potato, wheat flour bread, normal bun, butter cake and jack fruit are an intermediate GI diet (GI 55-70). Boiled cassava is a high GI diet (GI>70). Soluble fiber rich diets lower the glycaemic indices. The GI values of cooked white rice differed significantly ($P<0.05$) from brown rice and parboiled rice. The GI values of 'Pittu' differed significantly ($P<0.05$) from 'string hopper'. The GI values of boiled potato and cassava differed significantly ($P<0.05$) from boiled green gram and chick pea. The GI value of boiled green gram did not differ significantly ($P>0.05$) from chick pea. The GI values of wheat flour bread, normal bun and butter cake differed significantly ($P<0.05$) from hard bun and rusk. The GI value of papaya differed significantly ($P<0.05$) from other fruits. The GI value of 'Itharai' plantain differed significantly ($P<0.05$) with the other plantain varieties.

Conclusion

Consumption of soluble fiber diets decrease the glycaemic indices. Low GI diets are helpful to reduce the postprandial blood glucose level and good for diabetic mellitus patients.