In Vivo Glycaemic Response to Selected Commonly Consumed Sri Lankan Rice–Based Foods Prepared Using Three Long-Grain Rice Varieties

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Sri Lankans heavily rely on rice-based diets. However, the Glycaemic index (GI) values of many local rice-based dishes have been underexplored. This study aimed to investigate the Postprandial Glycaemic Responses (PGRs) elicited by selected rice-based dishes prepared using different cooking methods, from three long grain rice varieties [CIC *Savandara* Mix, CIC Red Fragrant (Broken) and CIC Super Kernel]. Selected dishes, namely milk rice, *Diyabath*, rice porridge, fried rice and string hoppers (served as a mixed meal with coconut gravy) were prepared following standard recipes and analysed for proximate composition. *In vivo* GI values of plain cooked rice and dishes were determined following the ISO 26642:2010 procedure, in a randomized clinical trial, using a healthy human clinical panel of twenty-five volunteers. Each portion of test meals contained 50 g of available carbohydrates. Pure glucose (50 g) dissolved in 250 ml of water was served as the reference. *Savandara* Mix rice reported a medium GI (58 ± 8.4) whereas milk rice (51±5.0) and *Diyabath* (40 ± 5.8) prepared from the same rice reported low GI values. Fried rice prepared from Super Kernel rice exhibited a low GI value (40 ± 5.0). Red Fragrant (Broken) rice (67 ± 6.8) and derived dishes; rice porridge (62 ± 10.6) and string hopper mixed meal (59 ± 9.1) were categorized as medium GI food. Additionally, milk rice prepared from *Savandara* Mix, when served with a minimal sufficient amount (15 g) of a commercially available accompaniment (*Katta Sambal*) elicited a GI of 50 ± 6.5 indicating no statistically significant difference ($p < 0.05$) when compared with milk rice served alone. The results indicate that method of preparation and addition of fat, protein and fibre can help optimize the PGR of rice-based dishes. Furthermore, it depicts potential use of commercially available *Katta Sambal* as a carrier food during GI testing. Moreover, each dish tested can be tailored to specific health needs.

Keywords: Rice, glycaemic response, rice-based dishes, Sri Lankan food

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