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Switching to an ultra-low carbohydrate diet has a similar effect on postprandial blood glucose concentrations to administering acarbose to healthy cats fed a high carbohydrate diet

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Background – The alpha-glucosidase inhibitor, acarbose, can improve glycaemic control in diabetic dogs and cats when combined with insulin therapy. However it is unknown whether the benefits of adding acarbose to a high carbohydrate diet can also be achieved by simply feeding an ultra-low carbohydrate diet.

Objective – To assess the effect of acarbose in decreasing postprandial glucose concentrations when administered to healthy cats fed diets with high or ultra-low carbohydrate content, fed as one meal or multiple meals each day.

Design – Twelve cats were used in a four-period cross-over study. Following consumption of a maintenance cat food for 2 weeks and baseline testing, three cats were then randomly allocated to each of four diet-treatment sequences: Ultra-low [6.6% metabolisable energy (ME)] or high (57.9% ME) in carbohydrate, each with and without added acarbose. Within each diet, postprandial glucose concentrations were assessed when diets were fed as a meal, and when the diet was fed as multiple meals. The acarbose dose was 25 mg/cat once daily for meal-fed cats, and 12.5 mg/cat twice daily for cats fed multiple meals. All diets were fed for 2 weeks prior to testing in the third week.

Outcomes – Amongst cats fed the high carbohydrate diet, the 12-hour mean AUCglucose and mean glucose concentration was significantly lower when acarbose was administered (P<0.001). In meal-fed cats receiving the high carbohydrate diet and acarbose once daily, acarbose action was only significant in the first 12 hrs.

Conclusion – We conclude that acarbose significantly decreased postprandial hyperglycaemia in cats fed a high carbohydrate diet. High carbohydrate diets resulted in significantly higher (24-hours) postprandial glucose concentrations than ultra-low carbohydrate diets.

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Folate intake in Vitilevu, Fiji

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Background – Most plant foods, especially green vegetables, wholegrain breads and cereals and peas and dried beans contain folates. There is a critical need to estimate dietary folate intakes for nutrition monitoring and food safety evaluations in the South Pacific.

Objectives – One objective of this survey was to ascertain the knowledge of the people of the Central and Eastern parts of Viti Levu in the Fiji Islands about the importance of folates in their diet. Another objective was to collect information on the types of food consumed by the population in order to select folate containing foods and to analyse their folate content. A third objective was to assess whether the people surveyed were getting sufficient folates in their daily diet.

Design – A short qualitative food frequency questionnaire (FFQ) to assess folate intake was developed. A random sample of 200 males and females was interviewed in the year 2005. The average age for the study sample was 35 years old. 50% were from rural areas and 50% from urban.

Outcomes – The FFQ showed that most of the foods high in folic acid/ folate were being consumed only once a week in both the male and female population. In the research study of folate levels in Fiji leafy vegetables, Chinese cabbage (Brassica chinensis) and Bele (Abelmoschus manihot) were found to have high levels of folates (1). However, it was noted that of the female population surveyed, none consumed these vegetables on a daily basis.

Conclusion – There is a need to explore ways to improve folate intakes in the overall population in Fiji Islands and the South Pacific to prevent folate deficiency diseases, especially neural tube defect in females of child bearing age.

Reference