Carbohydrates in predialysis patients

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GUIDELINES

No recommendations possible based on Level I or II evidence

SUGGESTIONS FOR CLINICAL CARE

(Suggestions are based on Level III and IV evidence)

- **Priority should be given to a diet aimed at avoidance of protein-energy malnutrition, and reducing fat intake to less than 30% of daily energy intake, with the saturated component limited to 10%. Carbohydrates should be used to make up the balance of the required daily energy intake. (Opinion)**

Early referral to a dietician skilled in renal care is recommended. The renal dietician should provide a tailored and balanced diet addressing the patient's energy requirements, protein limitations, and lipid/fat calorie intake for general health, along with the carbohydrate intake. The mix of carbohydrate intake may vary between individual patient groups (e.g. diabetes mellitus patients).

The nephrologist at the time of referral should recommend to the dietician any special requirements for the individual patient (e.g. cholesterol limits in coronary artery disease) along with protein intake. Attainment of an ideal body weight (as assessed by BMI) may need addressing concurrently.

Background

In non-diabetics, there is no research on which to base a recommendation on energy intake from carbohydrate sources.

With the adjustment of dietary protein content (i.e. limited protein intake of 0.75–1.0 g/kg/day) for its benefits on the progression of renal failure (see dietary protein restriction CARI guideline), and the implementation of a limited lipid diet for the cardiovascular benefits (see cardiovascular risk factors CARI guidelines), it may be difficult to attain adequate caloric intake by increasing the carbohydrate content of the diet. Malnutrition or undesired weight loss may ensue.

There is no evidence to support the recommendation of the percentage of the daily energy intake (DEI) that should come from carbohydrate in the non-diabetic pre-dialysis patient. This recommendation is made from an extrapolation of the evidence for limited-lipid diets in the normal population to minimise cardiovascular risks and

the protein intake to minimise progression of renal failure data, and the avoidance of protein-energy malnutrition data.

The objective of this guideline is to assess whether differing daily dietary carbohydrate intake has an effect on mortality or morbidity in pre-dialysis patients.

Search strategy

Databases searched: MeSH terms and text words for kidney disease were combined with MeSH terms and text words for dietary carbohydrates then combined with the Cochrane highly sensitive search strategy for randomised controlled trials and search filters for identifying prognosis and aetiology studies. The search was carried out in Medline (1996 – November Week 2 2003). The Cochrane Renal Group Trials Register was also searched for trials not indexed in Medline.

Date of searches: 27 November 2003.

What is the evidence?

No randomised controlled trials (RCTs) are available which address this issue.

Summary of the evidence

There are no RCTs on this topic.

What do the other guidelines say?

Kidney Disease Outcomes Quality Initiative: No recommendation.

British Renal Association: No recommendation.

European Dialysis & Transplant Nurses Association/European Renal Care Association: No recommendation.

Implementation and audit

Importance should be placed on a balanced diet that has adequate calories, adequate protein intake, and a healthy fat/cholesterol intake. The daily energy requirements then are balanced by the carbohydrate fraction. Close monitoring, and ongoing education by the dietician is imperative to avoid malnutrition.

Suggestions for future research

Explore the effects of differing carbohydrate and fat components in dietary intake.

References

Nil.