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[Intervention Review]

Low protein diets for chronic kidney disease in non diabetic adults

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ABSTRACT

Background

For more than fifty years, low protein diets have been proposed to patients with kidney failure. However, the effects of these diets in preventing severe kidney failure and the need for maintenance dialysis have not been resolved.

Objectives

To determine the efficacy of low protein diets in delaying the need to start maintenance dialysis.

Search methods

Cochrane Renal Group studies register, the Cochrane Central Register of Controlled studies, MEDLINE, and EMBASE. Congress abstracts (American Society of Nephrology since 1990, European Dialysis Transplant Association since 1985, International Society of Nephrology since 1987). Direct contacts with investigators.

Selection criteria

Randomised studies comparing two different levels of protein intake in adult patients suffering from moderate to severe kidney failure, followed for at least one year.

Data collection and analysis

Two authors independently selected studies and extracted data. Statistical analyses were performed using the random effects model and the results expressed as risk ratio (RR) for dichotomous outcomes with 95% confidence intervals (CI). Collection of the number of "renal deaths" defined as the need for starting dialysis, the death of a patient or a kidney transplant during the study.

Main results

Ten studies were identified from over 40 studies. A total of 2000 patients were analysed, 1002 had received reduced protein intake and 998 a higher protein intake. There were 281 renal deaths recorded, 113 in the low protein diet and 168 in the higher protein diet group (RR 0.68, 95% CI 0.55 to 0.84, P = 0.0002). To avoid one renal death, 2 to 56 patients need to be treated with a low protein diet during one year.

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Authors' conclusions

Reducing protein intake in patients with chronic kidney disease reduces the occurrence of renal death by 32% as compared with higher or unrestricted protein intake. The optimal level of protein intake cannot be confirmed from these studies.

PLAIN LANGUAGE SUMMARY**Low protein diets can delay kidney failure in people with kidney disease (diabetic kidney disease excluded)**

Kidney disease (nephropathy) can lead to kidney failure (end-stage kidney disease). A diet low in protein is sometimes recommended to try to slow the progression of kidney disease. Monitoring compliance with a protein-restricted diet is possible by determining urea production since urea is a byproduct of the degradation of all proteins. If urea production is reduced then the accumulation of toxins will be limited. The review of studies for people with kidney disease (diabetic kidney disease excluded) found that low protein diets can delay end-stage kidney disease.