COSTEFFECTIVENESS ANALYSIS FOR THE TREATMENT OF CRONIC KIDNEY DISEASE WITH LOW PROTEIN DIET

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OBJECTIVES

Several clinical studies have shown that a low protein diet in patients with Cronic Kidney Disease (CKD), delays and prevents the natural progression of the end stage renal disease (ESRD) and the necessary treatment of renal dialysis. Studies to investigate the effects of the low protein diets in preventing severe kidney failure are very few for Italy. The aim of this study is to estimate the costeffectiveness of a low protein diet treatment compared with no dietary treatment in patients with CKD 45 after 2, 3, 5 and 10 years.

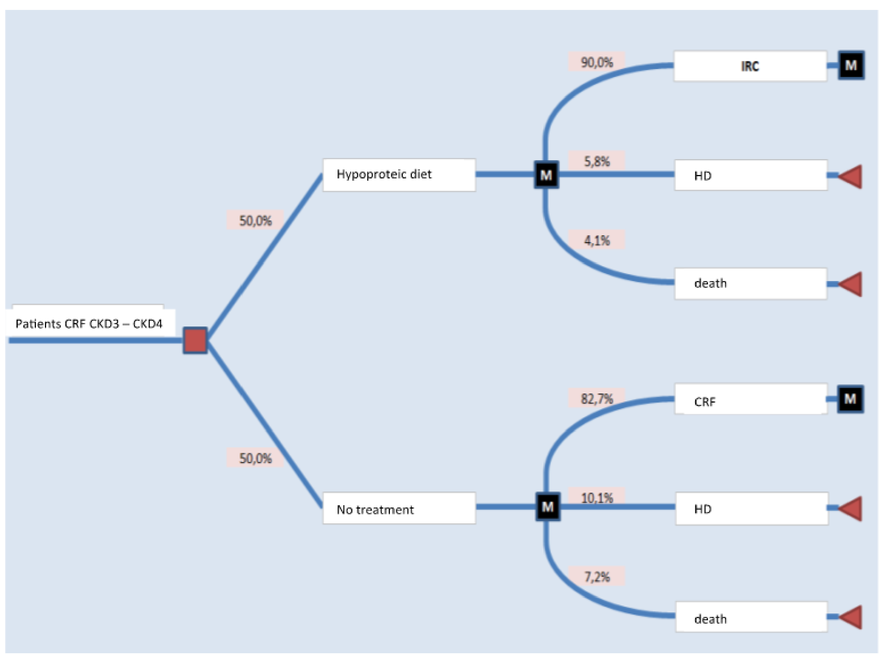
METHODS

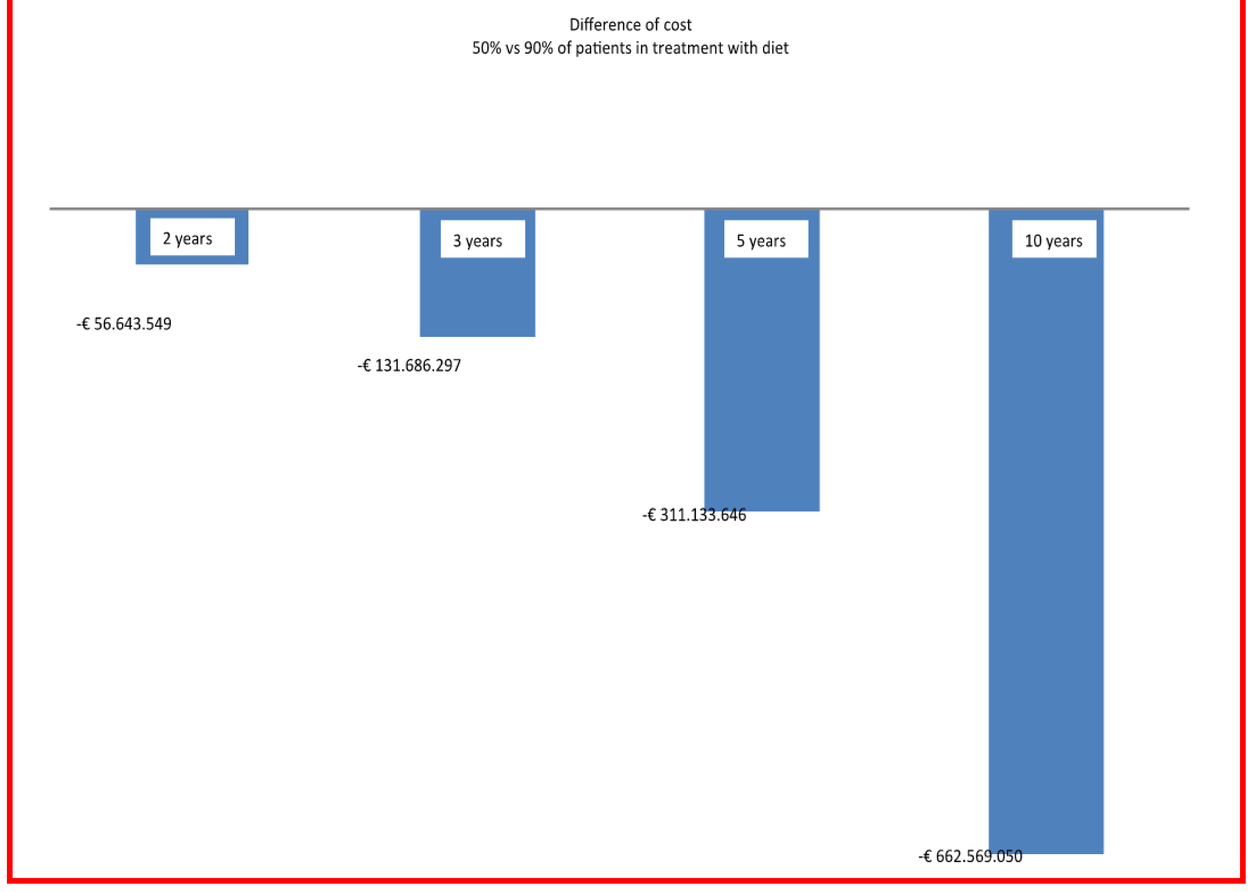
A decision tree algorithm was developed to estimate costs and QALYs associated with low protein treatment and no treatment for
patients with CKD 45.
The prevalence of patients with CKD 4-5 refers to a population aged ≥40 years old was 0.3% estimated by a study of Gambaro et al. on the 2010. The transition probability was estimated on data from ten studies identified by a Cochrane review to determine the efficacy of low protein diets in delaying the need to start maintenance dialysis. The Quality Adjusted Life Years (QALYs) scores used were estimated with the Time Trade Off (TTO) by a study of Gorodetskaya et al. in 2005.
The costs of dialysis has been estimated by a study of Censis (20099, an italian social study and research institute and amounted to approximately €49,000 per patient per year. The costs of lowprotein diet refer to contributions of €1,440 per patient per year made by the health system of Lazio region for patients that use a lowprotein diet.

RESULTS

The treatment with lowprotein diet is more effective in terms of QALYs: the difference is always in favor of dietary treatment from a 0.05 after the first two years, 0.1 after three years, 0.22 after five years and up to a differential of 0,66 year after the first 10 years of treatment.

Markov model





CONCLUSIONS

In terms of costeffectiveness, the dietary treatment is always dominant in all considered intervals. The dominance is due to the fact that the treatment is more effective in terms of QALYs and at the same time is less expensive. The results of the present analysis indicates that treatment of patients with CKD with a low protein diet is cost effective relative to notreatment in an Italian setting.

References

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