

THE ECONOMIC BURDEN OF DELAYED NEPHROLOGY REFERRAL

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Objectives

Late referral of chronic kidney disease patients to nephrology care endangers patients' outcome. KDIGO guidelines define late referral as referral to renal services less than 1 year before start of renal replacement therapy. The aim of this study was to ascertain cost effectiveness and clinical benefit of timely referral to nephrology care.

Methods

This study considered incident haemodialysis patients at our Haemodialysis Centre, between 2008 and 2011. Serial laboratory data were collected at dialysis initiation and monthly until 12 months of follow-up. Costs were calculated based on the Portuguese capitation system. T-test for variable comparison and Kaplan-Meier for survival were used in the statistical analysis.

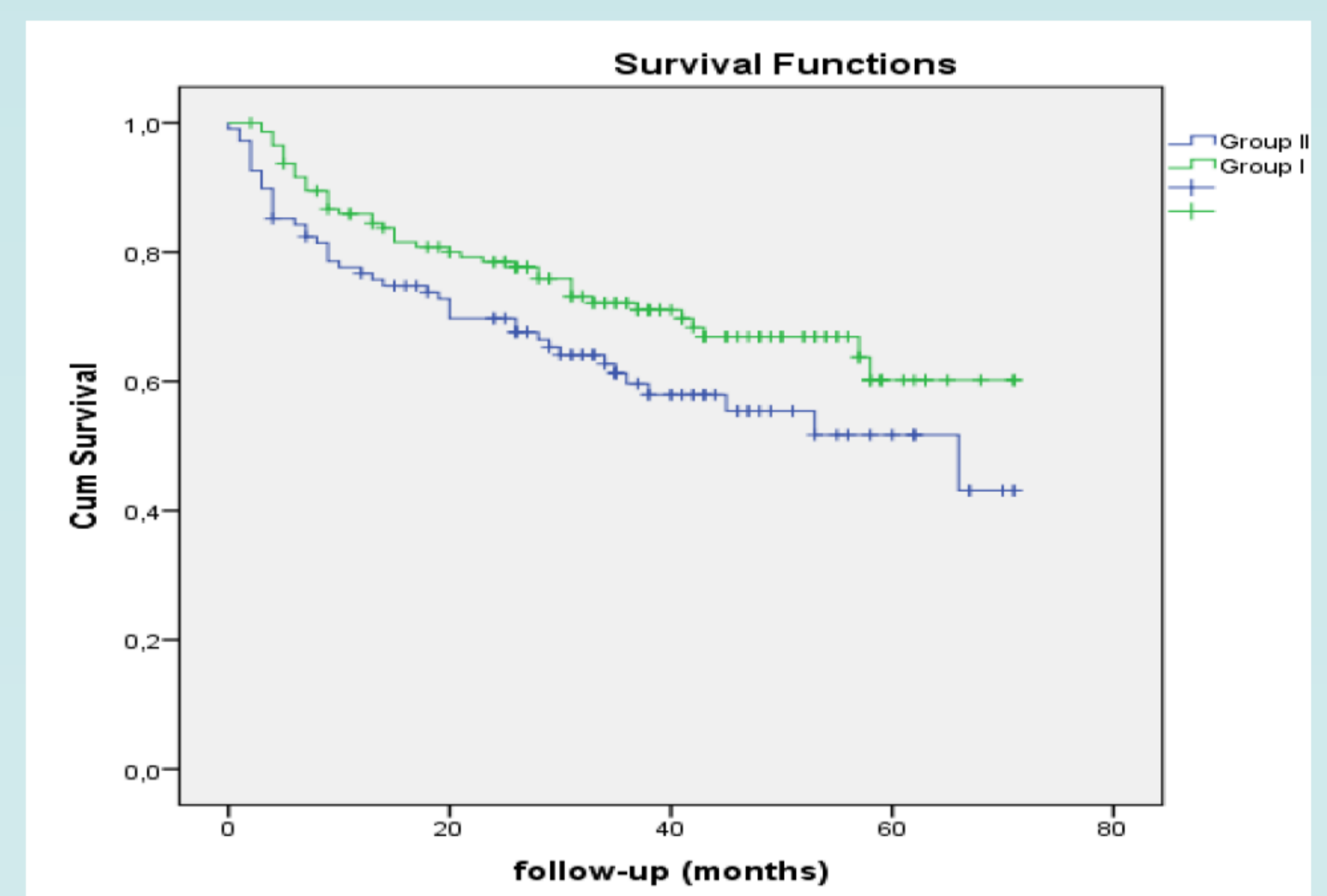
Results

A total of 252 patients (94 females, 158 males), with mean age of 66.7 years, were included. Group I (n= 144 patients), which included patients referred to Nephrology care at least 12 months prior to dialysis initiation (mean time of follow-up= 51.3 months), started HD earlier (eGFR 9.6 vs 8.1 ml/min/1.73m², p=0.004), and presented higher hemoglobin (10.7 vs 10.2 g/dL, p=0.017) and albumin levels (3.7 vs 3.5 mg/dL, p=0.021). There were no differences related with age, gender, race, prevalence of diabetes or cardiovascular disease, and no discrepancies in bone metabolism indices between groups. Group II (n= 108 patients, mean time of follow-up= 2.5 months) had a higher global expenditure at 6 months evaluation (4900.5 vs 3946.2 euros/patient, p=0.026). These differences result mainly from the anemia related medication (4226.7 vs 3173.3 euros/patient/year, p=0.008), for an equal control of hemoglobin levels, and fade after 12 months of follow-up.

Table I – characteristics of the population

	Group I	Group II	p
n	144	108	
Follow up (months)	51.3	2.5	
eGFR (mL/min)	9.6	8.1	0.004
Albumin (g/dL)	3.7	3.5	0.021
Hb (g/dL)	10.7	10.2	0.017
Global expenditure at 6 months (euros/patient)	4900.5	3946.2	0.026
Costs of anemia related medication (euros/patient/year)	4226.7	3173.3	0.008
Definitive vascular access	81.8%	25.7%	0.0001
Number of hospitalization/patient	1.2	1.7	0.051
Days of hospitalization/patient	7.3	11.2	0.053

Figure I – Survival (Kaplan – Meier)



Group I initiated HD with a definitive vascular access in 81.8% of the cases (vs 25.7% in Group II, p<0.001). Nephrology follow-up resulted in a significant higher survival (log rank = 3.9, p=0.048) and lower morbidity, with a trend for lower hospitalization rate or duration (1.2 vs 1.7 hospitalization/patient, p= 0.051 and 7.3 vs 11,2 days of hospitalization/patient, p= 0.053).

Conclusions

In conclusion, patients referred to nephrologic care start dialysis sooner, with better albumin and hemoglobin levels, and a higher prevalence of definitive vascular access. These features result in lower medication cost (mainly anemia related medication) and lower hospital related expenses and morbidity.

References

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