

HOW LONG DOES IT TAKE FROM CKD ESTIMATED GFR 10ML/MIN/1.73M² TO THE INITIATION OF HAEMODIALYSIS? -THE COMPARISON OF DIABETIC NEPHROPATHY AND OTHER CKDS

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Objectives:

In ESRD, especially after CKD stage 5, it is important to know how long kidney survive from a certain level of kidney function to the initiation of haemodialysis because it may contribute patients' psychological care plan, the timing to prepare vascular access and some other things.

There are a few researches which mentioned the survival of kidney function^{1,2}). However, their starting points were wide range, like CKD4 or 5. Non has treated the declining of kidney function from a certain point to the initiation of haemodialysis.

Moreover, it is plausible that diabetic nephropathy patients need haemodialysis earlier than other CKD patients. No research clearly stated about this issue so far.

Therefore we tried to make these two points clear.

Methods:

First, we described how long does it take from estimated GFR10mL/min/1.73m² to the initiation of haemodialysis.

Then, we compared the duration of the period between diabetic nephropathy (Group 1) and other CKDs (Group 2). We compare their distribution of the two group and we drew Kaplan-Meier plot.

One hundred seventy six patients were initiated haemodialysis in our hospital for five years from 2009 to 2013. Necessary data were available for 113patients out of all the patients.

The calculation of estimated glomerular filtration rate

Estimated GFR was calculated by the following equations³).

For men: $eGFR = 194 \times sCr^{-1.094} \times Age(yrd)^{-0.287}$ For women: $eGFR = 194 \times sCr^{-1.094} \times Age(yrd)^{-0.287} \times 0.739$

sCr: serum creatinine

Statistical methods

Mann-Whitney's U test: The difference of distribution between the group 1 and 2

Student's t-test: The comparison of the level of eGFR at the initiation of haemodialysis between the group 1 and 2

Kaplan-Meier plot and log-rank test: The comparison of survival curve between the group 1 and 2

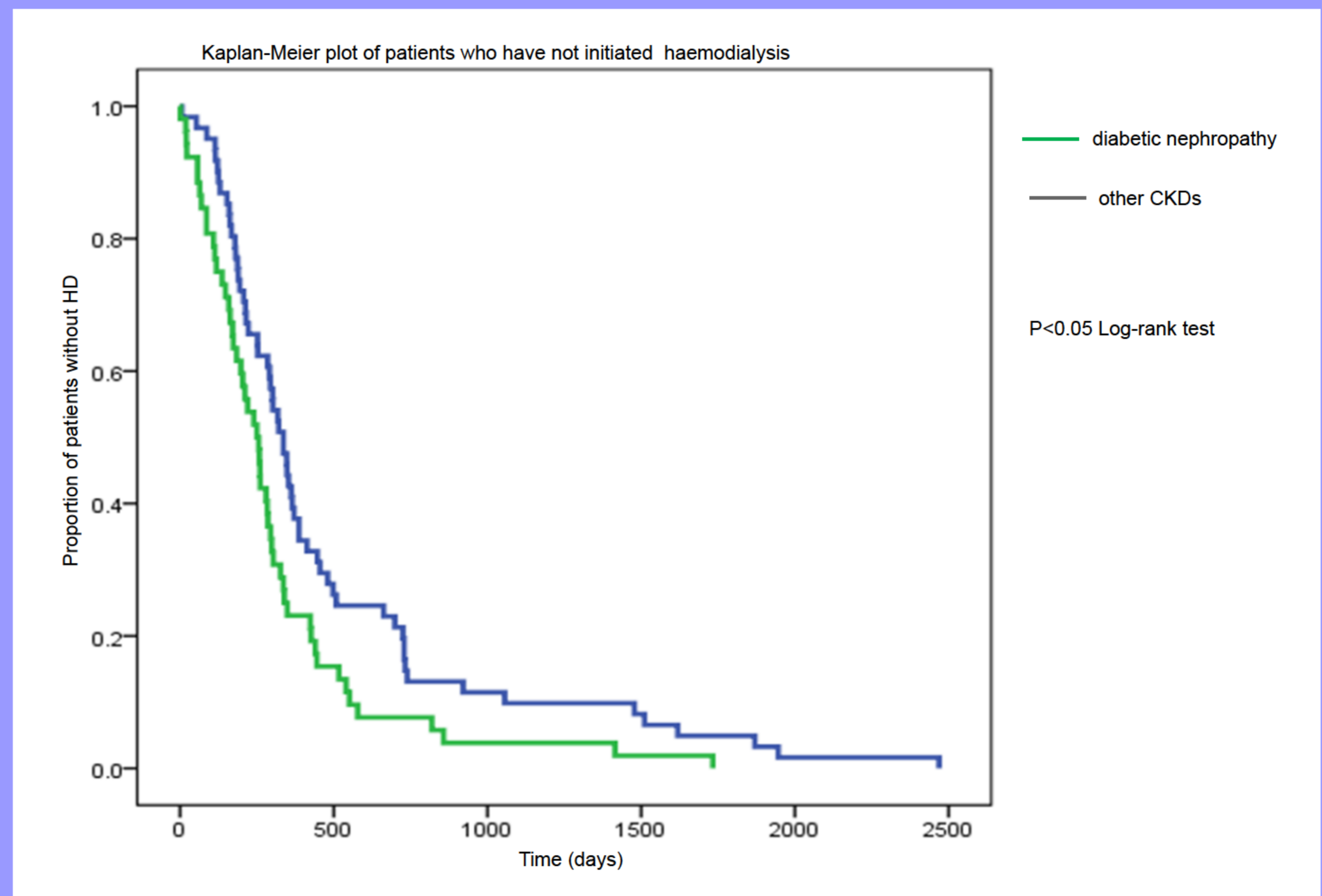
P<0.05 was considered to be significant in each cases.

Results:

Patients' characteristics			
	the number of patients	M/F	The average age \pm SD yrd (M/F)
Group 1	57	38/19	63.4 \pm 11.8 /72.7 \pm 8.76
Group 2	56	29/27	73.4 \pm 13.3 /69.8 \pm 13.3

The days from estimated eGFR 10mL/min/1.73m ² to the initiation of haemodialysis				
	the median	the 25 th	75 th	
Group 1	240	111.5	365	P<0.05 Mann-Whitney U test,
Group 2	341.5	184	557	

eGGFR at the initiation of haemodialysis		
Group 1	5.32 \pm 1.70	NS t-test
Group 2	5.15 \pm 1.72	



Conclusions:

The median of group1 is 250days and that of group2 is 341.5 days. Group2 has approximately 100 days better survival of kidney function at the median. This information contributes to the preparation of haemodialysis initiation. However, the specific figure depend upon the patient demographics, the criteria of haemodialysis initiation, medication and some other factors, so that the results of this research may not be directly applicable for every institution

References:

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3. Imai E, et al, Modification of the Modification of Diet in Renal Disease (MDRD) Study equation for Japan. Am J Kidney Dis. 50:927-37, 2007

