

# Survival among octogenarian patients entering hemodialysis

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## BACKGROUND

Due to increased lifespan, more and more patients nowadays reach ESRD at an extreme age.

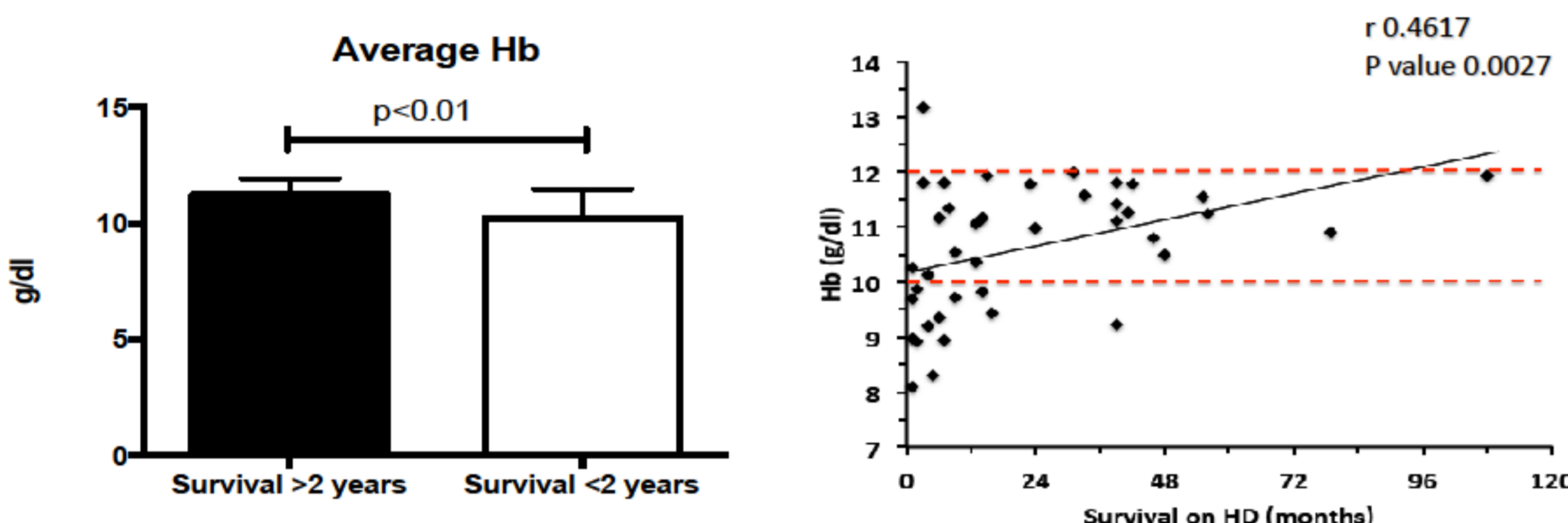
We evaluated factors associated with survival in a population of incident hemodialysis (HD) patients older than 80 years.

## METHODS

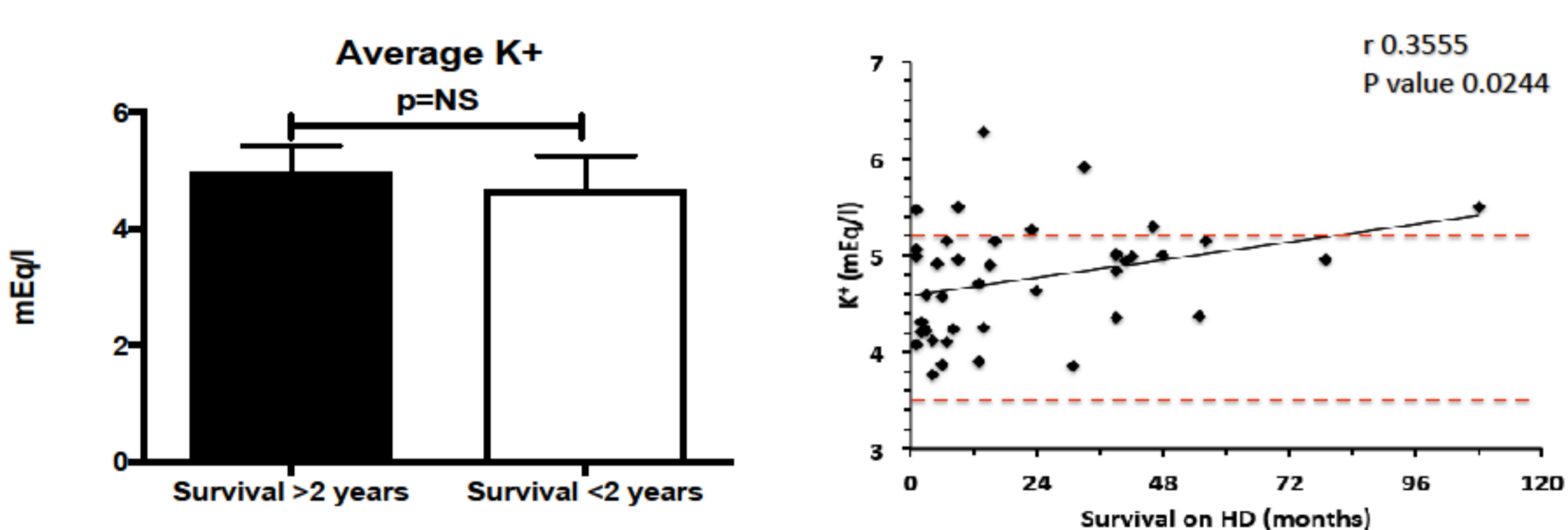
We retrospectively enrolled 40 CKD patients who started HD at 80 years of age or older and dialyzed for more than 1 month. We divided our population into 2 groups: A) patients who survived 2 or more years on HD (n=16) and B) patients who died within 2 years (n=24). We analyzed patient-related parameters, such as laboratory tests and the Cumulative Illness Rating Scale (CIRS), and treatment-related features.

## RESULTS

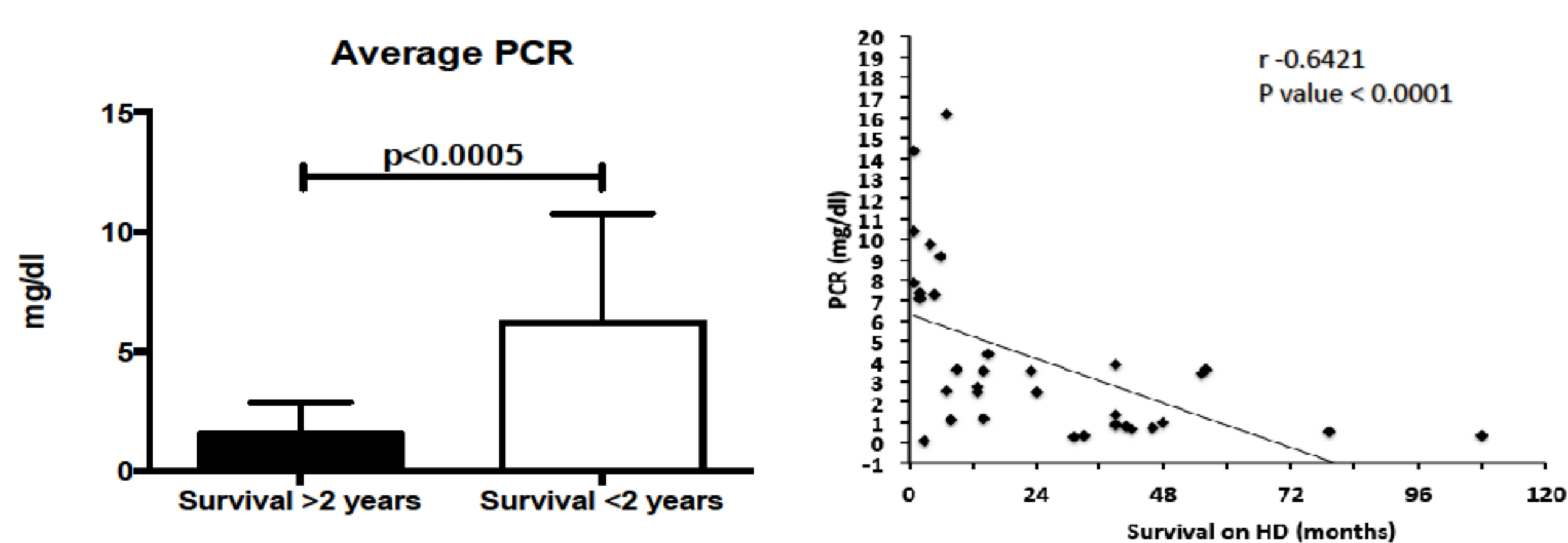
	Survival > 2 years	Survival <2 years	p
Age at initiation of dialysis (years)	82.42 ± 1.99	83.91 ± 2.39	<0.05
Dialytic age (months)	46.38 ± 21.23	6.83 ± 4.99	<0.001
Gender (male)	50%	62.5%	NS
Serum calcium (mg/dl)	8.91 ± 0.27	8.90 ± 0.91	NS
Serum phosphates (mg/dl)	4.19 ± 0.97	4.06 ± 0.77	NS
iPTH (pg/ml)	213.1 ± 93.1	196.1 ± 143.9	NS
Protidemia (g/dl)	6.4 ± 0.59	6.1 ± 0.61	NS
Serum albumin (g/dl)	3.50 ± 0.28	3.27 ± 0.54	NS



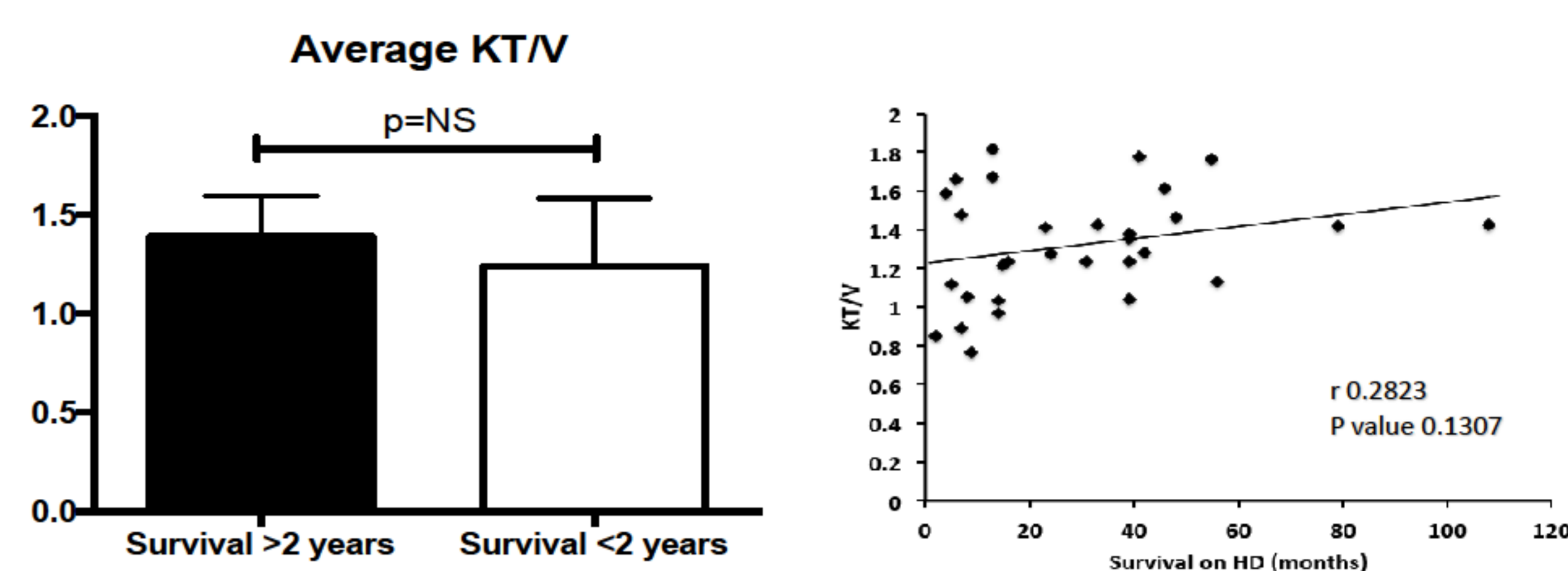
**Figure 1.** Average hemoglobin was higher in group A than group B ( $11.24 \pm 0.69$  vs  $10.21 \pm 1.27$  g/dl,  $p < 0.01$ ). Hemoglobin directly correlated with survival ( $p < 0.01$ ).



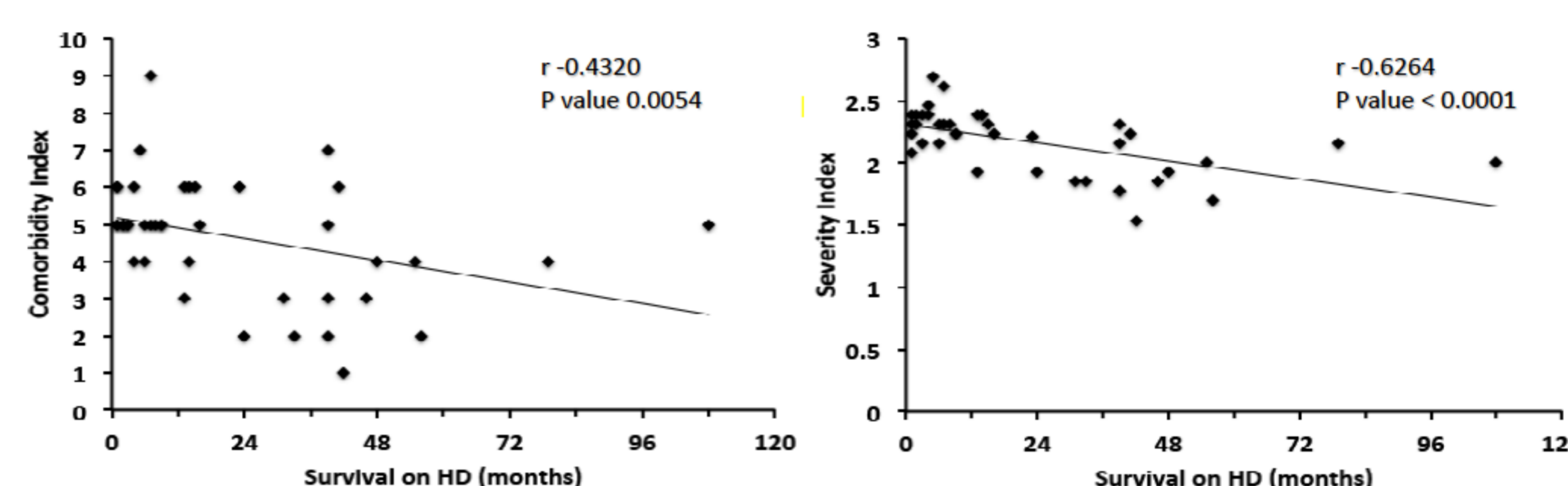
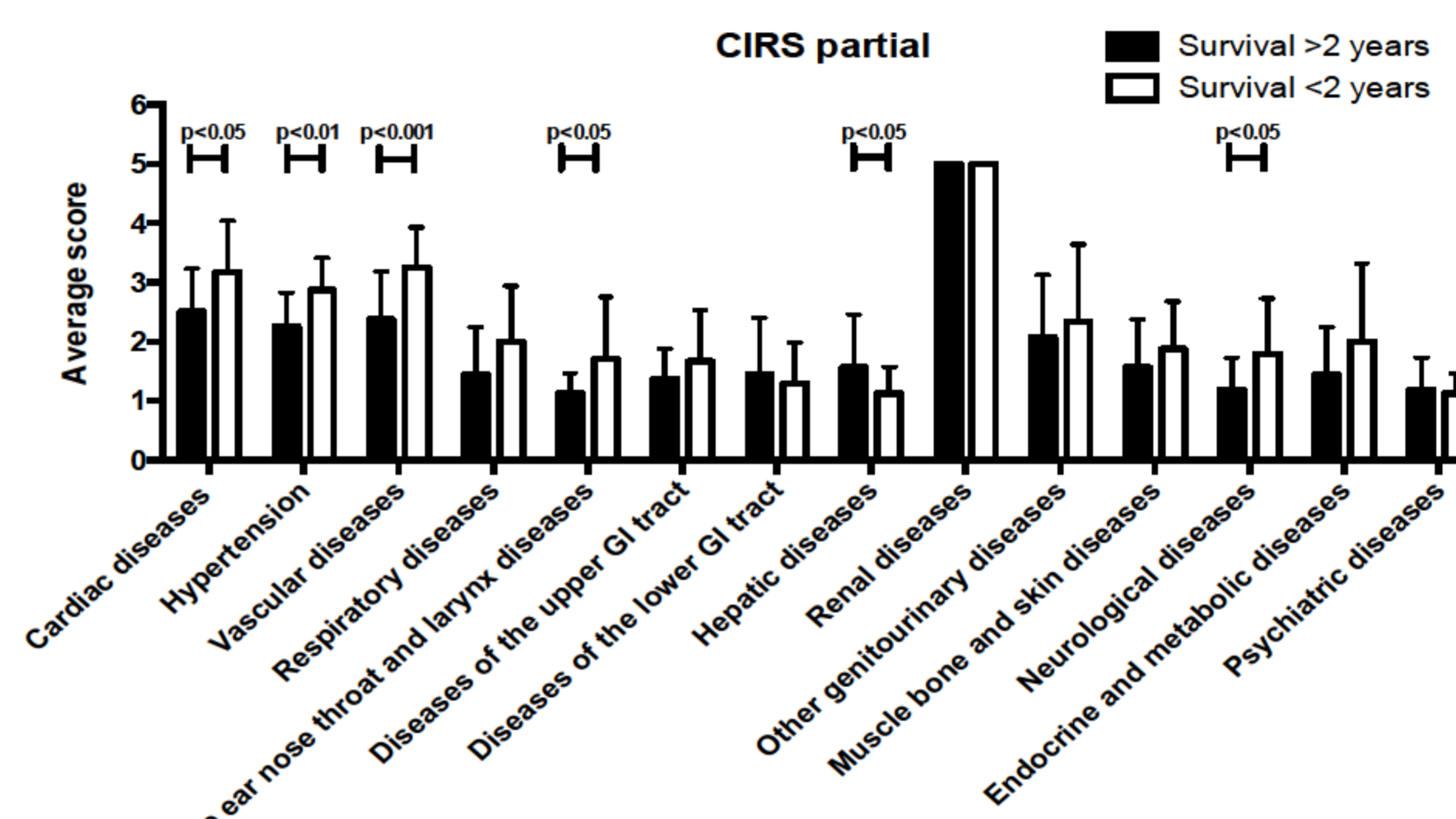
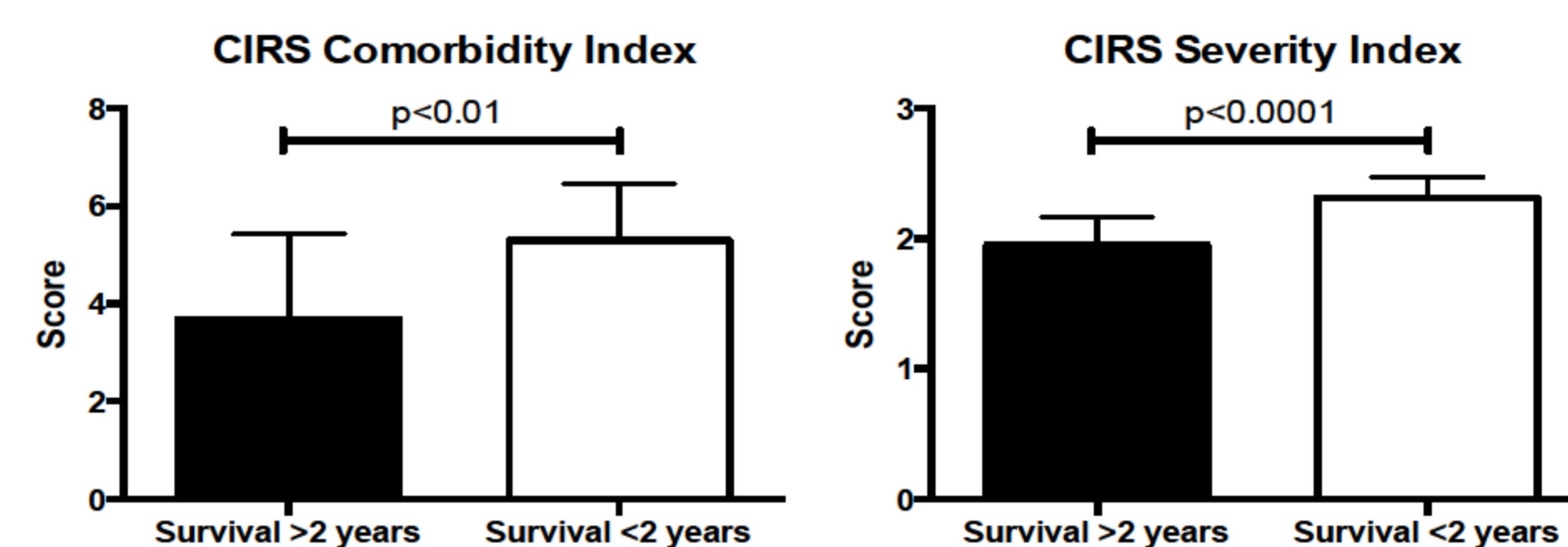
**Figure 2.** We did not find any difference between the 2 groups in the average serum  $K^+$  level but  $K^+$  directly correlated with survival ( $p < 0.05$  for values between 3.8 and 6.3 mEq/l).



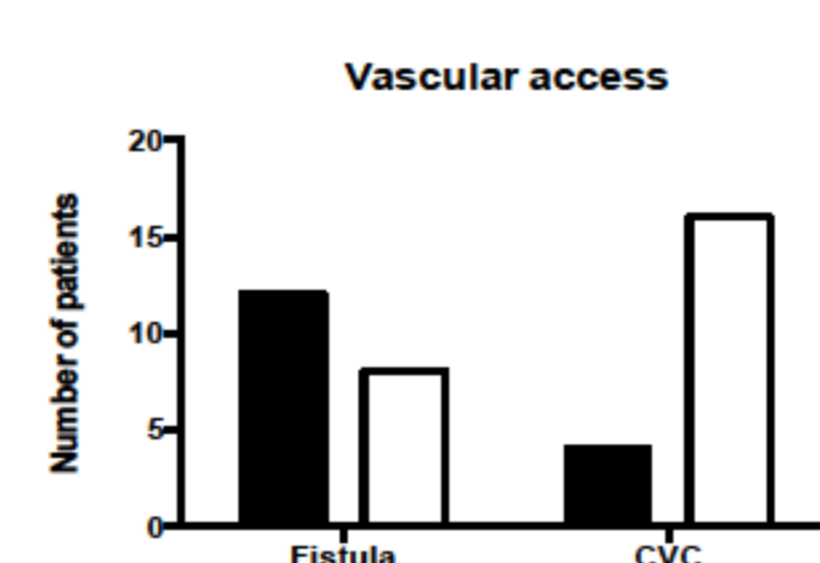
**Figure 3.** Average CRP was higher in group B than group A ( $1.53 \pm 1.32$  vs  $6.18 \pm 4.58$  mg/dl,  $p < 0.001$ ). CRP inversely correlated with survival ( $p < 0.0001$ ).



**Figure 4.** Dialysis adequacy was not different between the groups [KT/V  $1.39 \pm 0.20$  (A) vs  $1.24 \pm 0.34$  (B)] and did not correlate with survival.



**Figure 5.** CIRS index, at initiation of HD, was greater in group B than A both for comorbidity ( $5.29 \pm 1.16$  vs  $3.69 \pm 1.74$ ,  $p < 0.01$ ) and severity score ( $2.31 \pm 0.16$  vs  $1.95 \pm 0.22$ ,  $p < 0.0001$ ) and inversely correlated with survival ( $p < 0.01$ ).



	Survival > 2 years	Survival <2 years
Fistula	12	8
CVC	4	16

**RR 3.00**

**Figure 6.** The type of vascular access at initiation of HD influenced mortality as a central venous catheter (CVC) was associated with a 3 fold higher relative risk of death within 2 years compared with a fistula ( $p < 0.05$ ).

## CONCLUSIONS

Our study shows that survival in octogenarian patients on HD is associated with the maintenance of good levels of hemoglobin, above 11 g/dl, and a good nutritional status as witnessed by  $K^+$  and total serum proteins. Avoiding late referral and placing an artero-venous fistula in advance before the initiation of the RRT, if feasible, seems to confer a survival benefit of 3 fold over a CVC. The presence of comorbidities and elevated inflammatory indexes predicts poor survival, thus it may be a helpful guide to discriminate which patient will benefit of the renal replacement therapy.

