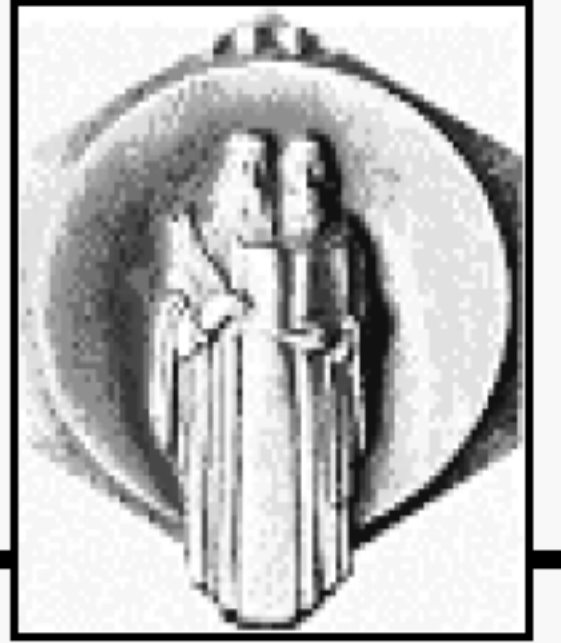


# SODIUM GRADIENT AND LONG-TERM OUTCOMES IN HEMODIALYSIS PATIENT

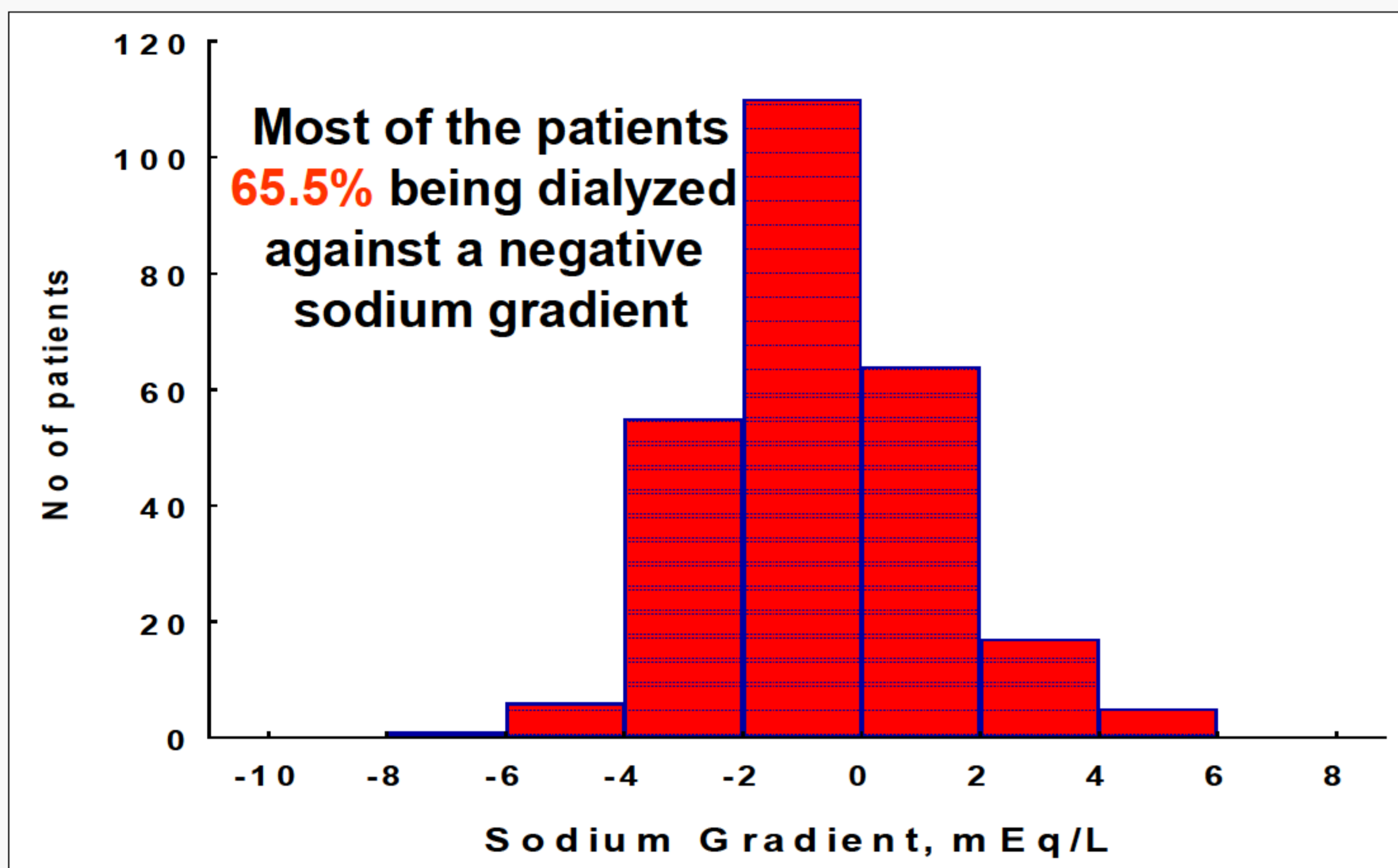
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- Sodium gradient (SG) is a potentially important factor to improve clinical outcomes in hemodialysis (HD) patients; however, there are limited data linking the SG with long-term clinical outcomes.
- The aim of this study was to explore the relationship between SG and mortality in a cohort of prevalent 258 HD patients treated in our Department in a five year follow-up analysis.

- We calculated the mean plasma sodium by the available pre-HD plasma sodium concentrations assessed at baseline and at monthly intervals during follow-up.
- All the patients were dialyzed with a standard dialysate sodium of 140mEq/L.
- Association with all-cause mortality were explored initially, between two groups of patients with positive and negative SG, then between three groups of patients stratified by SG, patients with SG >+2mEq/L, SG between +2mEq/L to -2mEq/L and SG >-2mEq/L



Tabl 2. Characteristics of the total study cohort and comparisons across the three sodium gradient categories

	SG>+2 No=32	SG +2 to - 2 No=164	SG > - 2 No=62	p
Age	42.05±18.70	49.74±14.92	52.35±12.86	0.020
Length of HD /hours/	4.05±0.10	3.99±0.17	3.91±0.25	0.004
UF (l)	3.50±0.92	3.09±0.78	2.96±0.83	0.028
IDWG (%)	5.57±1.37	4.96±1.21	4.46±1.25	0.000
LVMI (g/m <sup>2</sup> )	140.05±39.77	136.37±46.96	159.81±64.43	0.045
sodium/pl/	136.63±0.86	140.26±1.01	142.93±0.95	0.000
SG (mEq/L)	3.38±0.90	-0.26±1.03	-2.93±0.95	0.000

Tabl 1. Comparison between positive and negative sodium gradient

	Negative SG No=171	Positive SG No=87	p
Age (years)	50.60 ± 13.99	47.95 ± 16.69	ns
BW-post HD (kg)	65.63 ± 13.26	62.09 ± 12.62	0.04
Length of HD (hours)	3.96 ± 0.19	4.00 ± 0.18	0.05
IDWG (%)	4.78 ± 1.20	5.11 ± 1.36	0.04
Kt/V	1.20 ± 0.21	1.27 ± 0.20	0.01
glicemia (mmol/L)	5.86 ± 2.41	6.66 ± 3.23	0.02
Alb (g/L)	38.66 ± 2.99	37.25 ± 4.00	0.00
plasma sodium	141.65 ± 1.19	138.49 ± 1.25	0.00
sodium gradient	-1.65 ± 1.19	1.50 ± 1.25	0.00

IDWG -inter-dialytic weight gain; LVMI- left ventricular mass index

Fig 2. Survival curves associated with the three sodium gradient categories

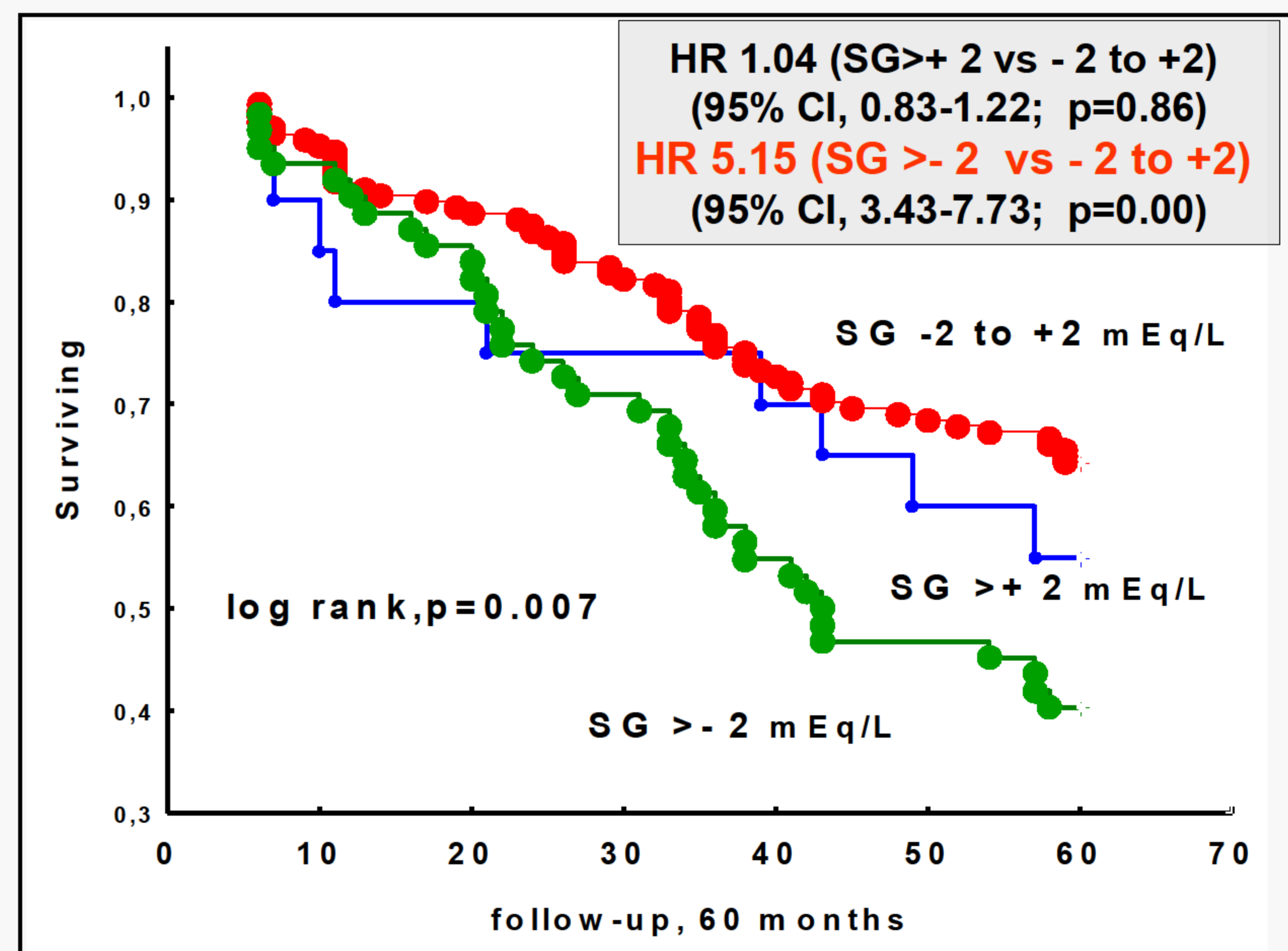
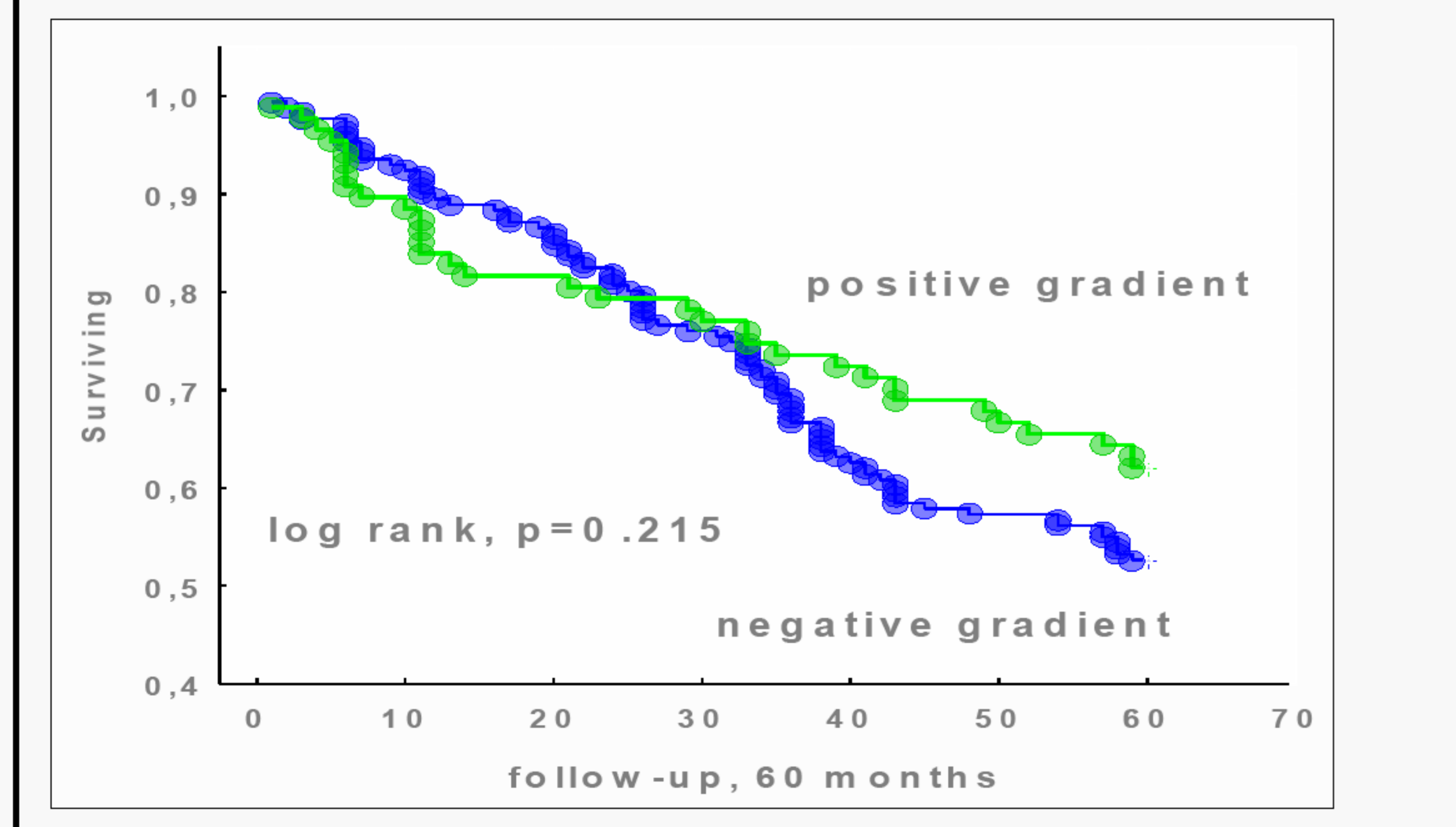


Fig 1. Kaplan–Meier Curves for all-cause mortality associated with the positive and negative SG



## CONCLUSIONS:

This study showed that a sodium gradient between +2mEq/L to -2mEq/L was associated with lower all-cause mortality HD patients, but the prospective studies with larger numbers of patients are needed to apply in clinical practice.

References:1. E. L.Penne, O. Sergejeva.Sodium Gradient: A Tool to Individualize Dialysate Sodium Prescription in Chronic Hemodialysis Patients? Blood Purif 2011; 2. J. M. Mendoza, S. Sun, G. M. Chertow et al.Dialysate sodium and sodium gradient in maintenance hemodialysis:a neglected sodium restriction approach? NDT 2011; 3. M. Hecking, A. Karaboyas, R. Saran, et al.Predialysis Serum Sodium Level, Dialysate Sodium, and Mortality in Maintenance Hemodialysis Patients: The Dialysis Outcomes and Practice Patterns Study (DOPPS).AJKD 2012;

