

Protein-energy wasting is a risk factor for infectious complications in both hemodialysis and peritoneal dialysis patients



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INTRODUCTION

Protein-energy wasting (PEW) has been linked to impaired immunity in both peritoneal dialysis (PD) and hemodialysis (HD) patients.

Whereas the prevalence of PEW is higher in HD than in PD patients, PD patients carry a higher baseline risk of infections. It is however unknown whether nutritional status may influence this infection risk in strata of dialysis modality.

AIM

To investigate the association between PEW and the risk of all-cause, dialysis technique and non-dialysis technique related infections in both HD and PD patients

METHODS

NECOSAD

- Multicentre prospective cohort study
- Incident adult dialysis patients
- Nutritional status was assessed every 6 months with 7-point Subjective global assessment (SGA)
 - 1-5: severe and moderate PEW
 - 6-7: normal nutritional status
- All medical records of all patients from 5 hospitals were assessed for information on infections (n=400)
- Follow-up from 3 months after the start of dialysis until 3 years, death or censoring

Statistical analysis

- 3-years and time-dependent Poisson regression to estimate incidence rate ratios for infections in patients with PEW (SGA 1-5) compared with a normal nutritional status (SGA 6-7)
- Adjusted for age, sex, ethnicity, primary kidney disease, Kahn-comorbidity score, and smoking status

CONCLUSIONS

- Protein-energy wasting is a risk factor for infectious complications in both HD and PD patients
- Improvement of SGA classification, irrespective of the subscale scores, may result in a decreased risk of infections
- Routine screening of nutritional status is important in all dialysis patients

RESULTS

Baseline characteristic	HD		PD	
	PEW	Normal nutritional status	PEW	Normal nutritional status
N (%)	76 (32)	164(68)	27(17)	133(83)
Age start dialysis (median)	71.1	69.1	57.9	53.5
Sex (% male)	68	62	61	68
Diabetes (%)	27	28	9	22
Kahn co-morbidity score (% severe category 3)	45	40	26	18
Smokers (%)	19	23	22	28
Incidence rate (per person years)	0.68	0.45	1.17	0.76

Patients with protein-energy wasting are somewhat older and suffer from more co-morbidity compared to those with a normal nutritional status

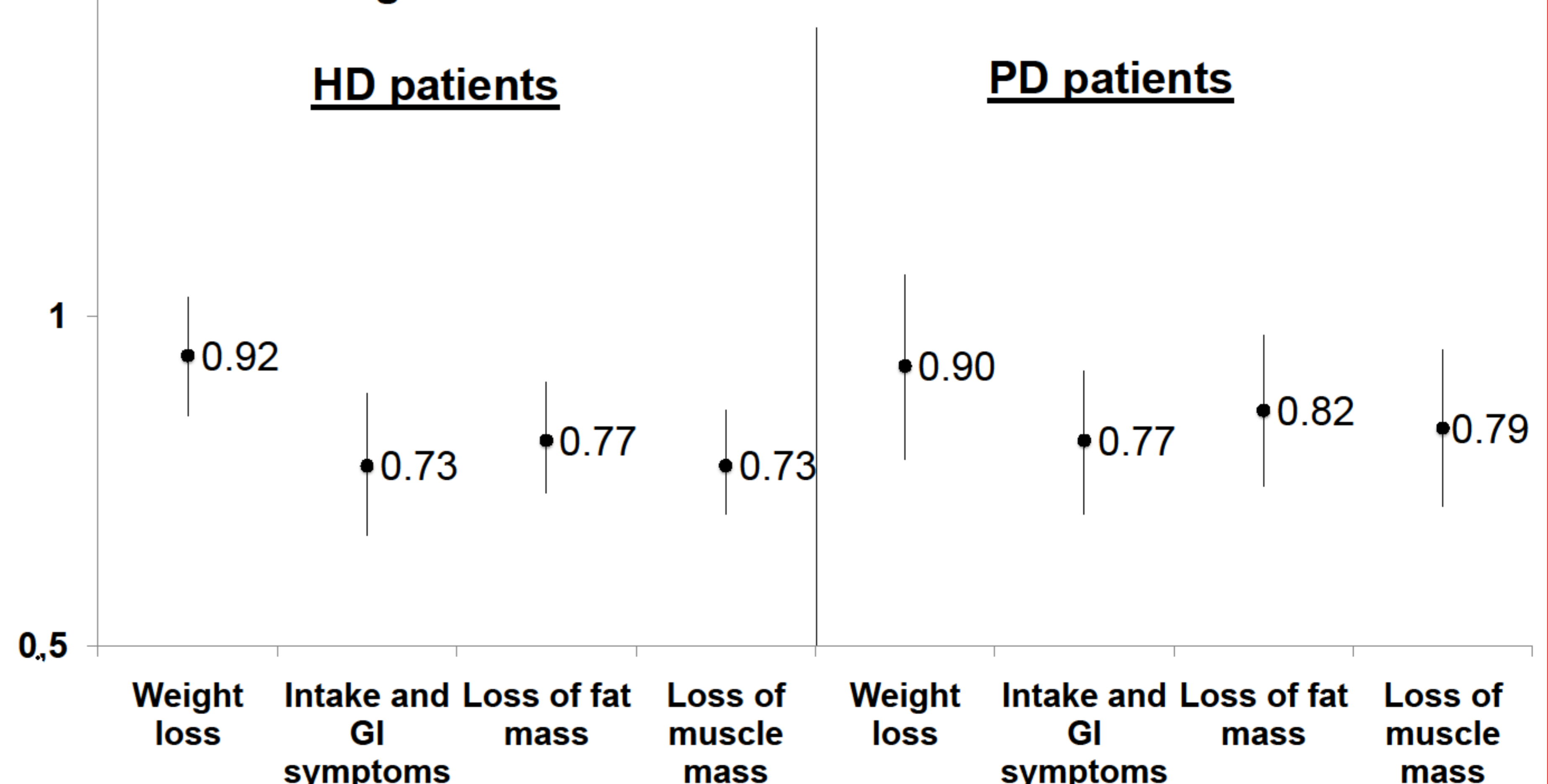
Protein-energy wasting is associated with a 40% higher risk of infections in both HD and PD patients

Incidence rate ratios for infections in patients with PEW on dialysis

	All-cause infection		Dialysis technique related infections		Non-dialysis technique related infections	
	3-years risk	Time-dependent risk	3-years risk	Time-dependent risk	3-years risk	Time-dependent risk
HD Crude	1.57 (1.18-2.08)	2.13 (1.59-2.84)	1.63 (0.97-2.73)	2.49 (1.47-4.22)	1.54 (1.11-2.16)	2.33 (1.67-3.25)
Adjusted	1.42 (1.06-1.92)	1.76 (1.30-2.37)	1.31 (0.74-2.32)	1.97 (1.12-3.46)	1.48 (1.05-2.10)	1.77 (1.25-2.52)
PD Crude	1.42 (1.03-1.96)	1.72 (1.21-2.44)	1.58 (1.11-2.26)	1.85 (1.26-2.72)	0.94 (0.44-2.01)	1.24 (0.52-2.95)
Adjusted	1.37 (0.98-1.92)	1.56 (1.08-2.24)	1.51 (1.04-2.19)	1.65 (1.11-2.47)	0.98 (0.44-2.18)	1.18 (0.48-2.88)

One point higher SGA classification on any SGA subscale is associated with a decreased risk of infections in both HD and PD patients

Adjusted time-dependent risk of infections per point higher on the SGA subscale classification



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