

24. Berliner DialyseSeminar

02. – 03. Dezember 2011

PD besser als HD vor NTX?

Pro

Haag-Weber (Straubing)

Contra

Lonnemann (Langenhagen)

PD besser als HD vor der Nierentransplantation ?

Studien		PD vs HD
Goldfarb-Rumyantzev et al USRDS, AJKD 2005	1990 – 1999 (n = 92.844), Predominant RRT modality	PD > HD
Butani Transplantation 2011	1995 – 2000 (n = 3.606) Pediatrics, duration of RRT	PD = HD
Resende et al Transplant Proc 2009	1989 – 2007 (n = 421) 88,8% on HD, duration of RRT	PD = HD
Schwenger et al CTS, NDT 2011	1998 – 2007 (n = 60.008) PD: n = 11.664; HD: n = 45.651	PD > HD

The role of pretransplant dialysis modality on renal allograft outcome

V. Schwenger, B. Döhler, Ch. Morath, M. Zeier, G. Opelz

Nephrol Dial Transplant 2011;26:3761

- Retrospektive Kohorten-Analyse aus der Datenbank der Collaborative Transplant Study (CTS)
- Nur 1. NTX, keine Lebendspenden, Alter der Empfänger > 18 Jahre
- Expanded criteria donors (ECDs): Alter >60 Jahre, Hypertonie, non-heartbeating Donor, TX-Center Einstufung „marginal“
- Increased-risk recipients (IRRs): Alter >65 Jahre oder Diabetes mell. als ESRD-Ursache, TX-Center Einstufung „moderate“ or „poor“

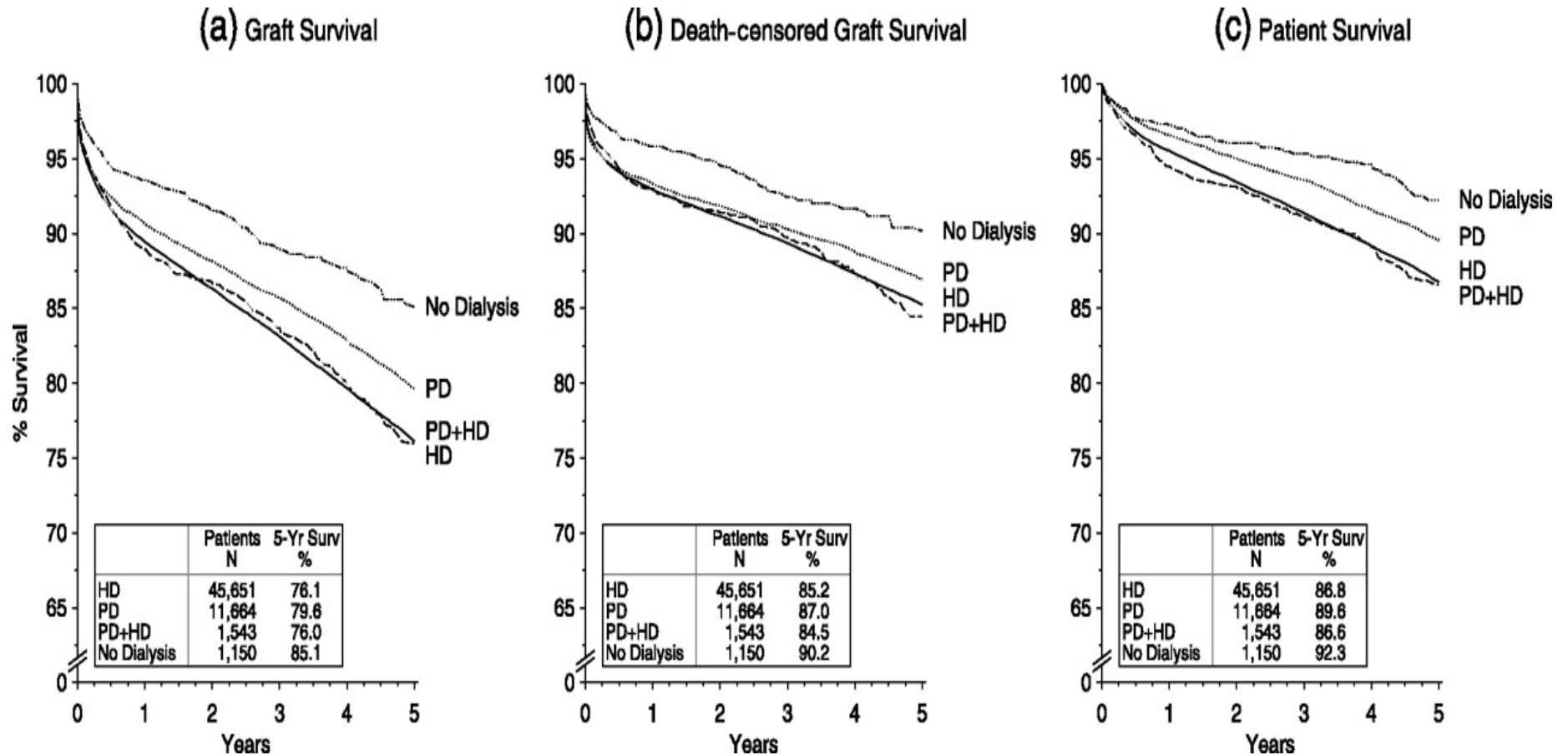
The role of pretransplant dialysis modality on renal allograft outcome

V. Schwenger et al, Nephrol Dial Transplant 2011;26:3761

Demographic and baseline characteristics (selection)

	HD (n = 45651)	PD (n = 11664)	P-value HD versus PD
Female recipient (%)	35.9	42.6	<0.001
Recipient age, years (mean±SD)	50.2 ± 12.9	48.7 ± 12.6	<0.001
Original diabetic disease (%)	8.5	10.5	<0.001
Good patient evaluation (%)	67.8	75.8	<0.001
Cardiovascular risk (%)	15.8	12.4	<0.001
Donor age, years (mean±SD)	46.7 ± 17.1	45.6 ± 16.5	<0.001
Time on dialysis, years (mean±SD)	4.1 ± 3.3	3.1 ± 2.7	<0.001

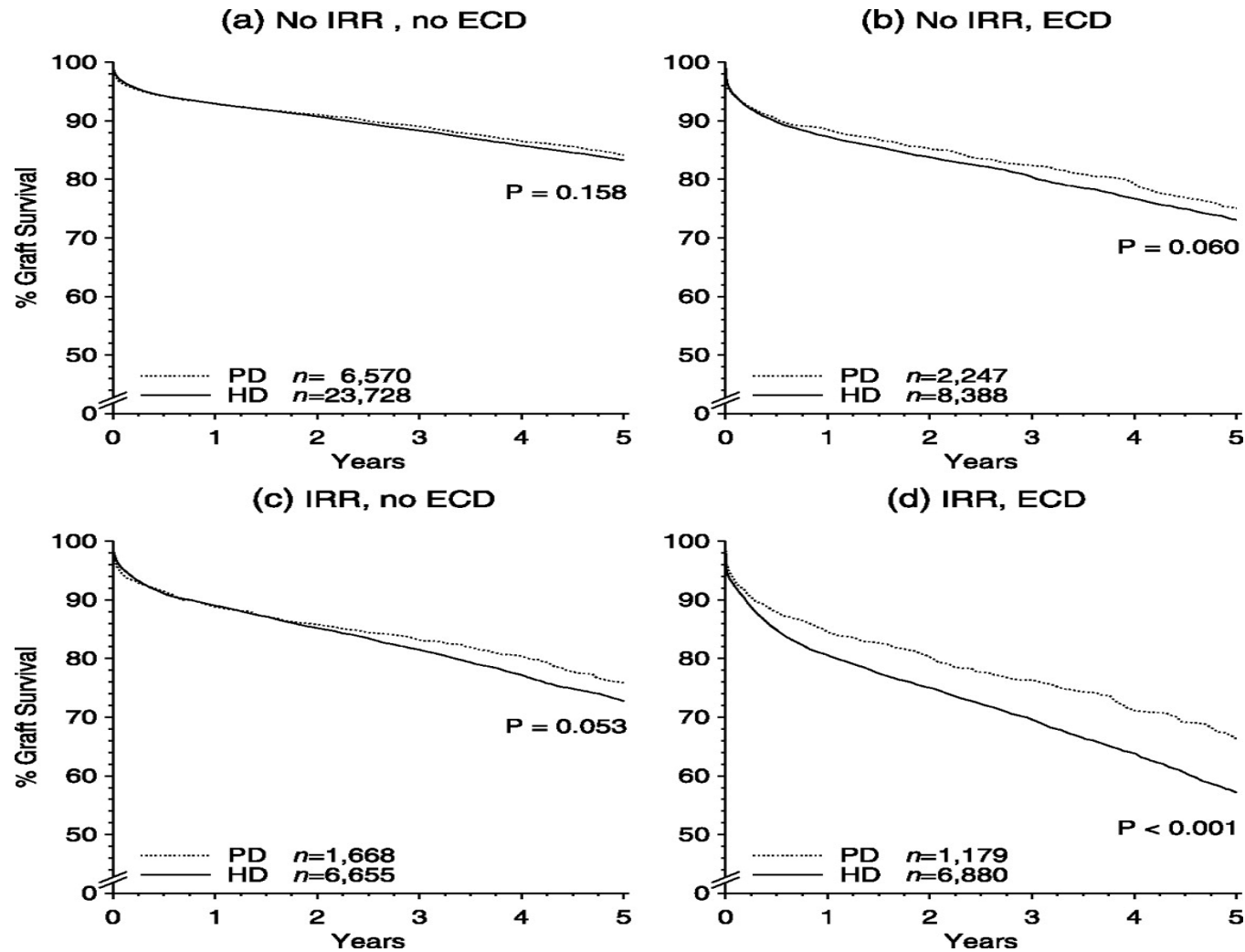
Unadjusted graft (a), death-censored graft (b) and patient (c) survival rates for the first 5 posttransplant years according to pretransplant dialysis modality.



Schwenger V et al. *Nephrol. Dial. Transplant.* 2011;26:3761-3766

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Five-year graft survival rates according to recipient (increased risk recipient = IRR) and donor evaluation (expanded criteria donor = ECD) (see Materials and methods) and pretransplant dialysis treatment modality. a) no IRR, no ECD; b) no IRR, ECD; c) IRR, no ECD; d) IRR, ECD.

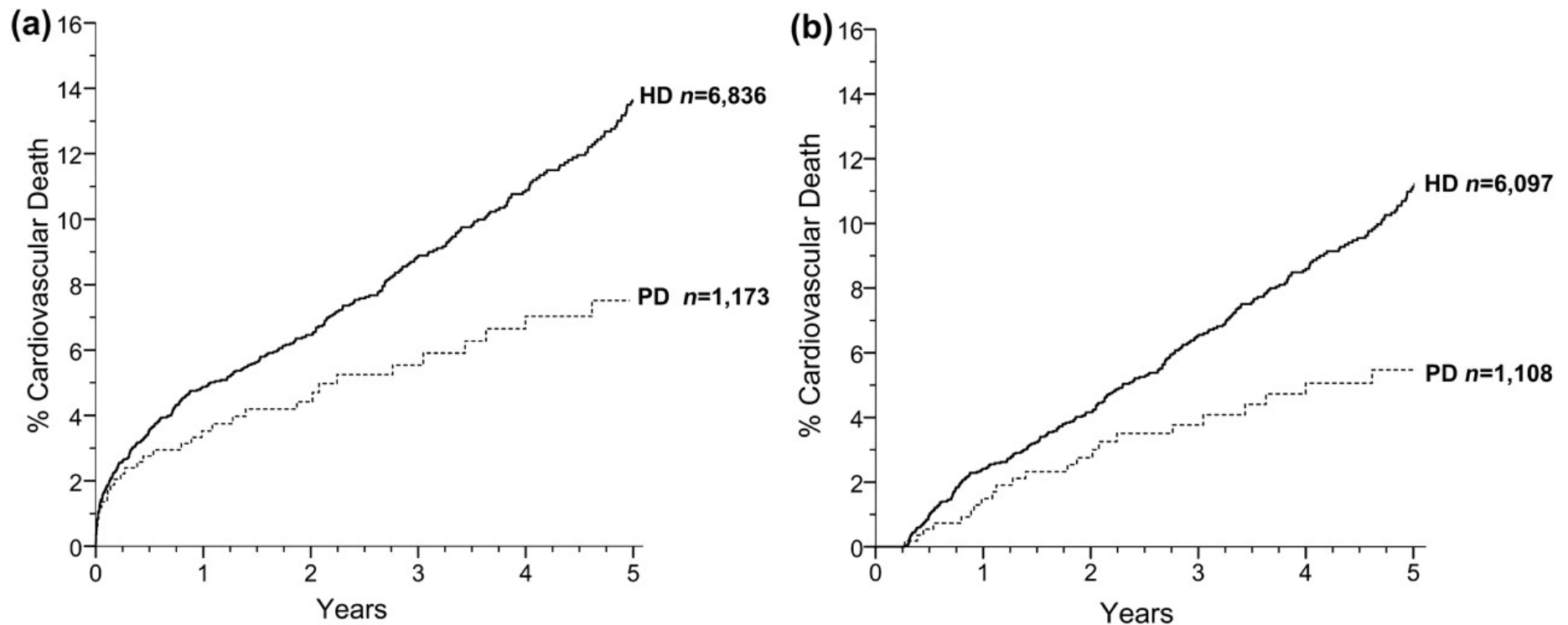


Schwenger V et al. Nephrol. Dial. Transplant. 2011;26:3761-3766

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Adjusted incidence curves of cardiovascular death according to Cox regression performed on IRRs who received grafts from ECDs. All confounders listed under Materials and methods were considered.

Representative for 60- to 64-year-old diabetic male allograft recipient



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- Patient survival but not death-censored graft survival was superior in PD patients
- After exclusion of the high-risk population, posttransplant survival of PD and HD was similar
- Pretransplant dialysis modality *per se* has no significant impact on allograft outcome.

PD besser als HD für „high-risk“ Transplantat-Empfänger?

Definition „erhöhtes kardiovaskuläres
Risiko“:

- Alter >65 Jahre oder
- Diabetes mell. als ESRD-Ursache
- TX-Center Einstufung „moderate“ or „poor“

PD besser als HD für „high-risk“ Transplantat-Empfänger?

Definition „erhöhtes kardiovaskuläres
Risiko“:

- Alter >65 Jahre oder
- Diabetes mell. als Fok
- TX-Center F

Unzureichend!
Comorbidität besser klassifizieren!
„high-risk“ or „poor“

PD besser als HD für „high-risk“ Transplantat-Empfänger?

Definition „erhöhtes kardiovaskuläres Risiko“:

- Alter >65 Jahre oder
 - Diabetes
 - TX-C
- Unzureichend!
Comorbidität besser klassifizieren!
„moderate“ or „poor“

Evaluation zusätzlicher Parameter erforderlich:

- Restdiurese, Chronische Überwässerung, AV-Shuntvolumen
- Hypertonie mit Organschäden
 - Hypertensive Herzkrankheit, Apoplexie, AVK
- Cardiorenales Syndrom Typ 4, KHK, congestive Kardiomyopathie, NYHA Klassifikation, Rhythmusstörungen
- Biomarker

PD und Restdiurese

[Krediet RT, Balafa O. Nat Rev Nephrol. 2010 Aug;6\(8\):451-60](#)

Cardiovascular risk in the peritoneal dialysis Patient

The development of overhydration after loss of residual renal function is probably the most important cardiovascular risk factor specific to peritoneal dialysis.

Other risk factors that are not specific to peritoneal dialysis but are related to ESRD include calcifications and protein-energy wasting. When present together with inflammation and atherosclerosis, protein-energy wasting is associated with a marked increase in the risk of cardiovascular death.

Chronische Überwässerung

[Wizemann V](#) et al. [Nephrol Dial Transplant.](#) 2009 May;24(5):1574-9.

The mortality risk of overhydration in haemodialysis patients

The hydration state (BCM) is an important and independent predictor of mortality in chronic HD patients secondary only to the presence of diabetes.

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[Foley RN](#) et al, [N Engl J Med.](#) 2011 Sep 22;365(12):1099-107.

Long interdialytic interval and mortality among patients receiving hemodialysis

event rates higher on the day after the long interval than on other days:

Mortality:

all-cause (P<0.001)
from cardiac causes (P<0.001)
infection-related (P = 0.007)
from cardiac arrest (P = 0.004)
from myocardial infarction (P<0.001)

Admissions for:

myocardial infarction (P<0.001)
congestive heart failure (P<0.001)
stroke (P<0.001)
dysrhythmia (P<0.001)
any cardiovascular event (P<0.001).

Shuntvolumen und Herzbelastung

[Malyszko J](#) et al [Ren Fail.](#) 2011;33(10):929-34.

Copeptin and Its Relation to Arteriovenous Fistula (AVF) Type and NYHA Class in Hemodialysis Patients.

- Copeptin is cosynthesized with vasopressin,
- In patients with decompensated heart failure, copeptin was an accurate prognostic marker for mortality.
- Creation of an arteriovenous fistula (AVF) might contribute to the development or worsening of congestive heart failure (CHF).
- Cohort of 93 clinically stable HD patients.
- In multiple logistic regression analysis, the only associate of copeptin was NYHA functional class. Copeptin level in HD patients depends on cardiac function.
- Proximal AVF creation might contribute to the development or worsening of CHF in HD patients.

Cardiorenal syndrome type 4

[House AA](#), [Ronco C](#). [Contrib Nephrol](#). 2011;171:50-6. Epub 2011 May 23.

The burden of cardiovascular risk in chronic kidney disease and dialysis patients (cardiorenal syndrome type 4).

In this review, the immense burden of cardiovascular risk faced by patients on dialysis, as well as lesser degrees of CKD, will be examined, with emphasis on rates of acute coronary syndrome/coronary insufficiency, congestive heart failure/left ventricular hypertrophy, and cardiac arrhythmia / sudden cardiac death.

Biomarker

- CRP
- BNP oder NT-proBNP
- Copeptin
- Angiopoietin-2
- Macrophage inhibitory cytokine-1 (MIC-1/GDF15)
- FGF-23

Ortiz et al [Nat Rev Nephrol](#). 2011 Nov 1. doi [Epub ahead of print]

König, [Nephrol Dial Transplant](#). 2011;26:3080-3083.

David S et al, [Nephrol Dial Transplant](#). 2011 Oct 4. [Epub ahead of print]

Breit SN et al, [Nephrol Dial Transplant](#). 2011 Sep 22. [Epub ahead of print]

Kendrick J et al, [J Am Soc Nephrol](#). 2011 Oct;22(10):1913-1922

Zusammenfassung / Diskussion

- HD = PD vor NTX für alle gut evaluierten Transplantationskandidaten im Alter von <65 Jahren ohne Diabetes mellitus
- Länge der Dialysezeit vor NTX wichtiger als die Modalität
- Kardiovaskuläres Risiko detaillierter beschreiben, Comorbidität besser klassifizieren
- Mehr Diagnostik, bessere Therapie (HD wie PD)
 - Cave chronische Überwässerung, Shuntvolumen, kardiale Funktion

Danke !

**für Ihre
Aufmerksamkeit**