

Sind Ca-haltige Phosphatbinder gefährlich?

Contra

23. Berliner Dialyse-Seminar

03. Dezember 2010

Berlin

R.M. Schaefer

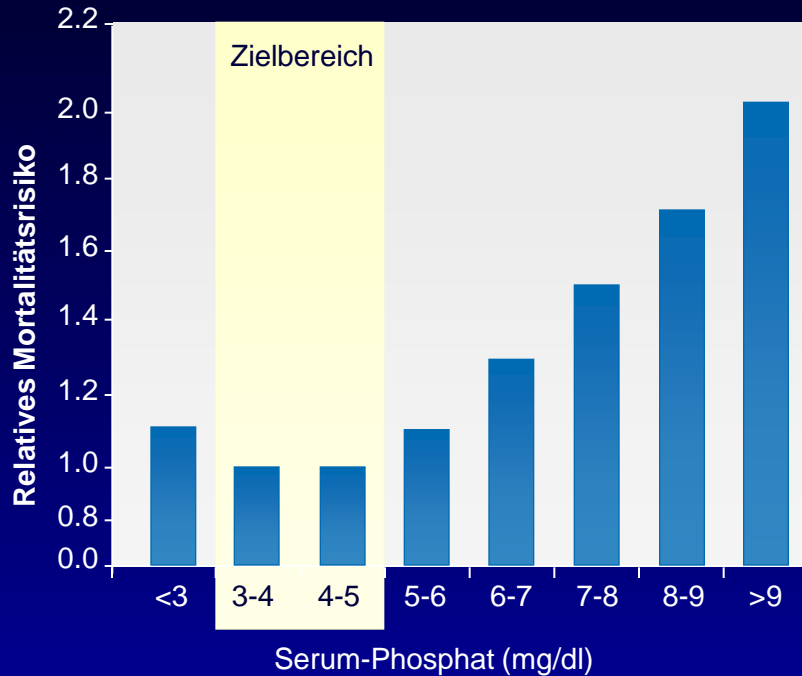
Innere Medizin D

Universitätsklinikum Münster

Hyperphosphatämie erhöht das relative Mortalitätsrisiko bei Dialysepatienten

40.538 Pts, FMC, USA

Block et al, JASN 2004



Zu hohe Phosphatwerte

	P _i über 5,5 mg/dl	Ca x P über 55 mg ² /dl ²
Frankreich	45,1	38,0
Deutschland	69,6	56,5
Italien	37,8	35,1
Japan	55,6	43,1
Spanien	46,4	43,2
England	50,8	44,9
USA	52,0	43,8

DOPPS II Data

Phosphorus Binders and Survival on Hemodialysis

Tamara Isakova,* Orlando M. Gutiérrez,[†] Yuchiao Chang,[‡] Anand Shah,* Hector Tamez,* Kelsey Smith,[†] Ravi Thadhani,* and Myles Wolf[†]

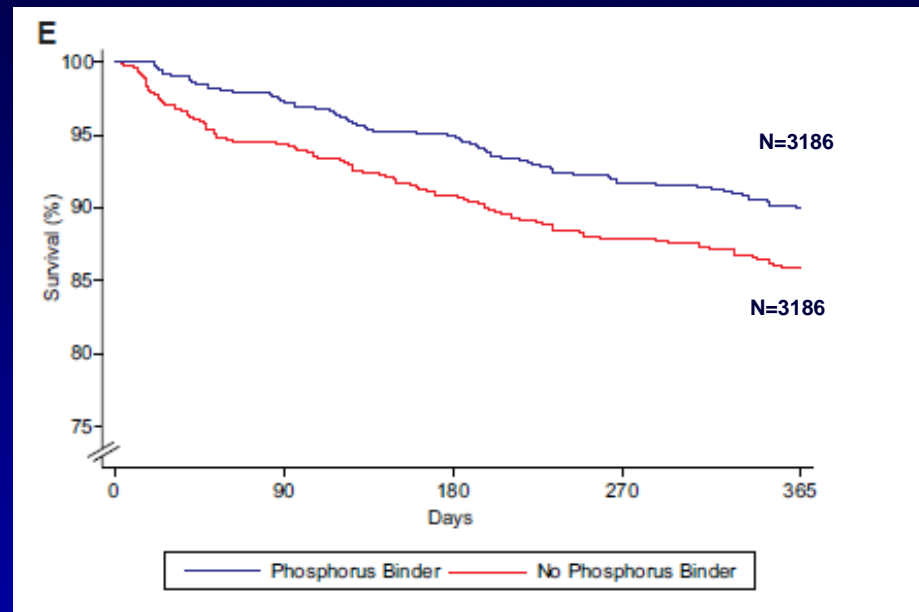
*Renal Unit, [‡]Department of Medicine, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts; and [†]Division of Nephrology and Hypertension, University of Miami Miller School of Medicine, Miami, Florida

Prospektive, observationelle Studie

P-Binder: 136 vs. 235 Todesfälle pro 1000 Pts-Jahre

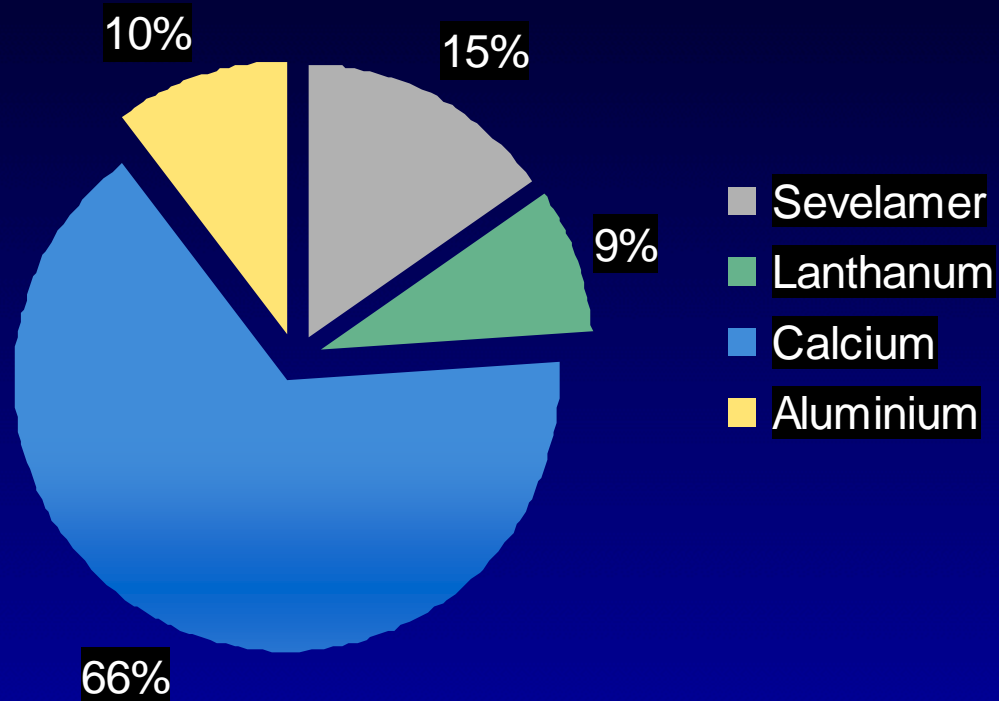
Eingesetzte P-Binder:

- 40% Calcium
- 40% Sevelamer
- 20% Lanthan
- häufig Kombinationen



Aktueller Gebrauch von Phosphatbindern

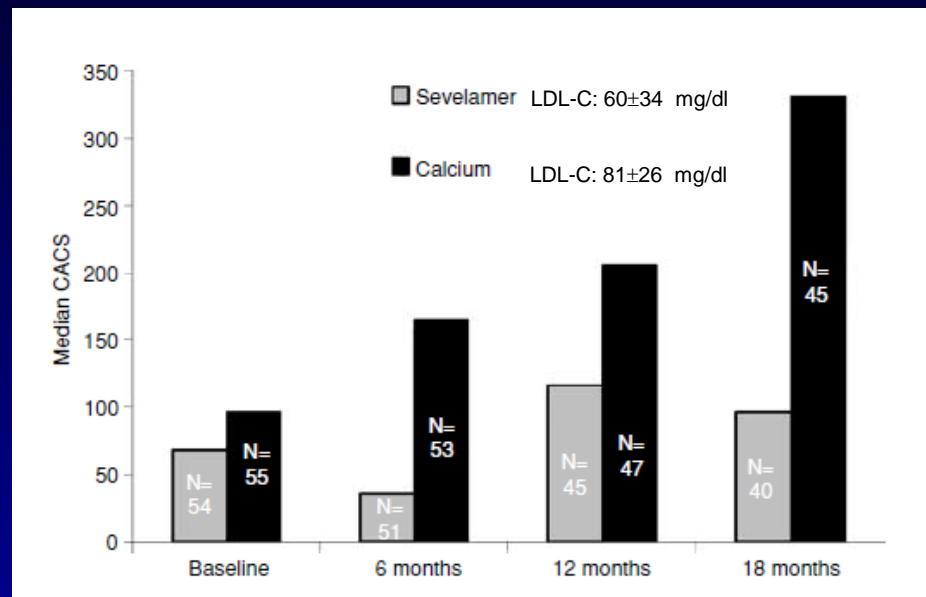
BRD: Phosphatbinder – Marktanteile Patienten*



Effects of sevelamer and calcium on coronary artery calcification in patients new to hemodialysis

GEOFFREY A. BLOCK, DAVID M. SPIEGEL, JAMES EHRLICH, RAVINDRA MEHTA, JILL LINDBERGH, ALBERT DREISBACH, and PAOLO RAGGI

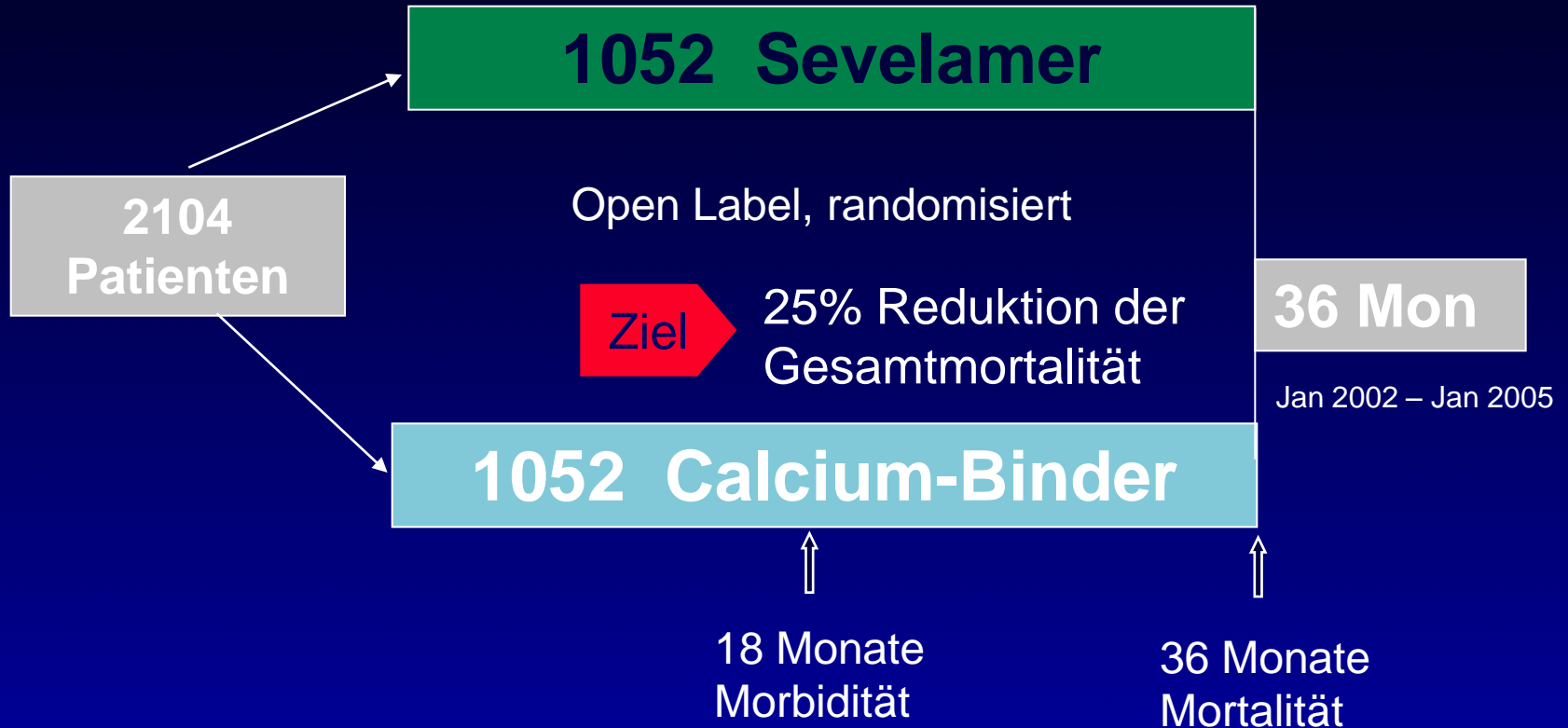
Median Coronary Artery Calcium Score



Pts ohne Koronarverkalkungen at baseline (40%) blieben verkalkungsfrei
Alle Progressoren (60%) waren bereits bei Studienbeginn verkalkt

Effects of sevelamer and calcium-based phosphate binders on mortality in hemodialysis patients

WN Suki¹, R Zabaneh², JL Cangiano³, J Reed⁴, D Fischer⁵, L Garrett⁶, BN Ling^{7,*}, S Chasan-Taber⁸, MA Dillon⁸, AT Blair⁸ and SK Burke⁸

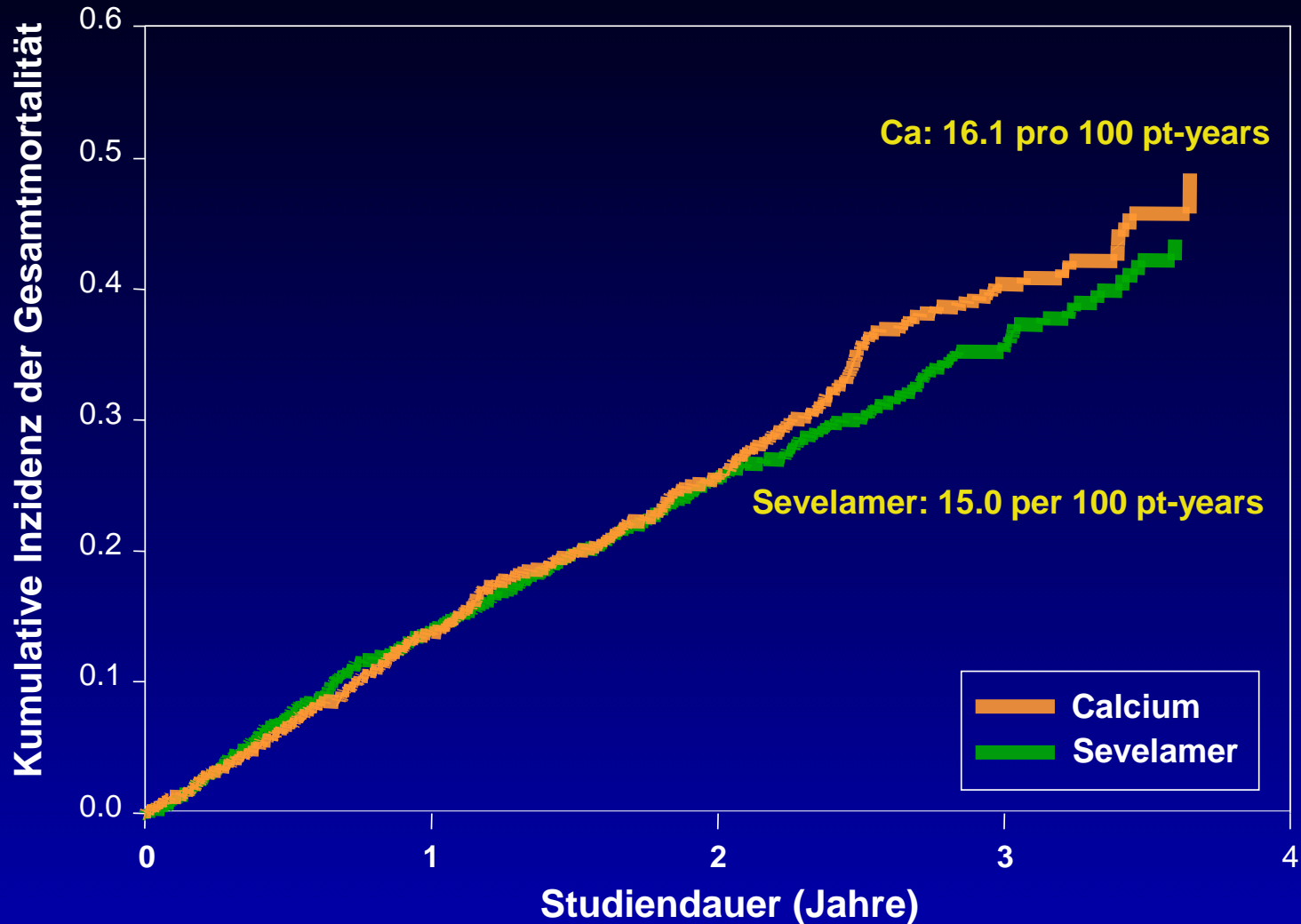


DCOR-Studie

Dialysis Clinical Outcomes
Revisited

Kidney Int 72:1130-1137, 2007

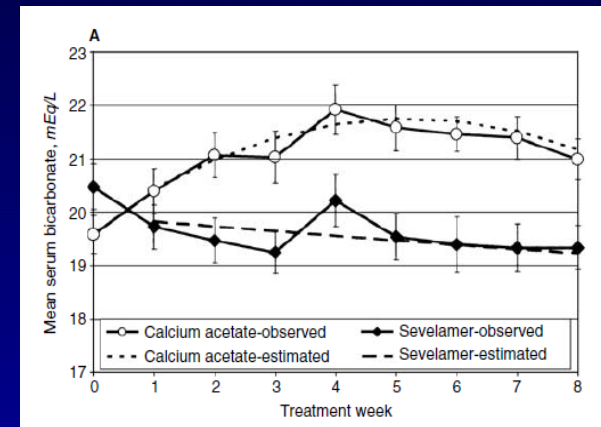
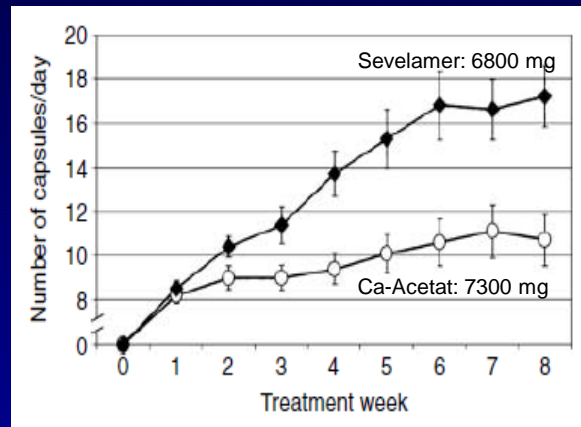
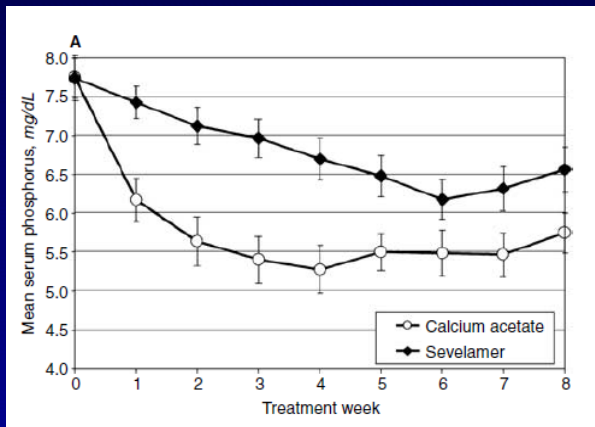
DCOR: All-Cause Mortality



Treatment of hyperphosphatemia in hemodialysis patients: The Calcium Acetate Renagel Evaluation (CARE Study)

WAJEH Y. QUNIBI, ROBERT E. HOOTKINS, LAVETA L. MCDOWELL, MICAH S. MEYER, MATTHIAS SIMON, RODOLFO O. GARZA, RUSSELL W. PELHAM, MARK V.B. CLEVELAND, LARRY R. MUENZ, DAVID Y. HE, and CHARLES R. NOLAN

Ca-Acetat: 48 vs. Sevelamer: 50 HD-Pts
Prospektiv, randomisiert, doppelblind
Phosphat-Target: <5.5 mg/dl
Hypercalcämie: 8/48 Pts (16,7%)



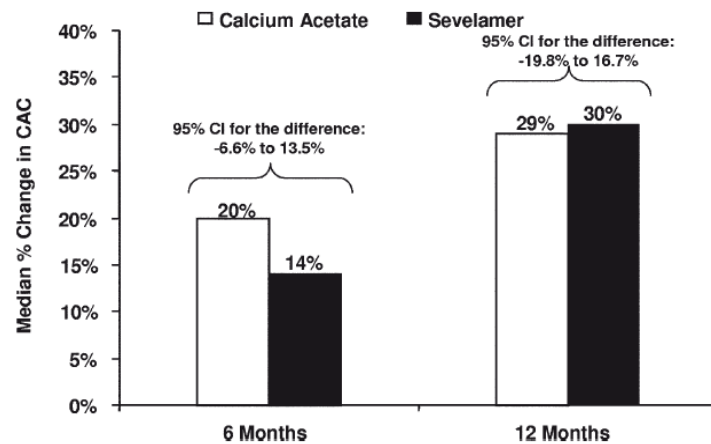
Dialysat-Ca: 1,25 mmol/l, Vit-D: ca. 60% in bd Gruppen

A 1-Year Randomized Trial of Calcium Acetate Versus Sevelamer on Progression of Coronary Artery Calcification in Hemodialysis Patients With Comparable Lipid Control: The Calcium Acetate Renagel Evaluation-2 (CARE-2) Study

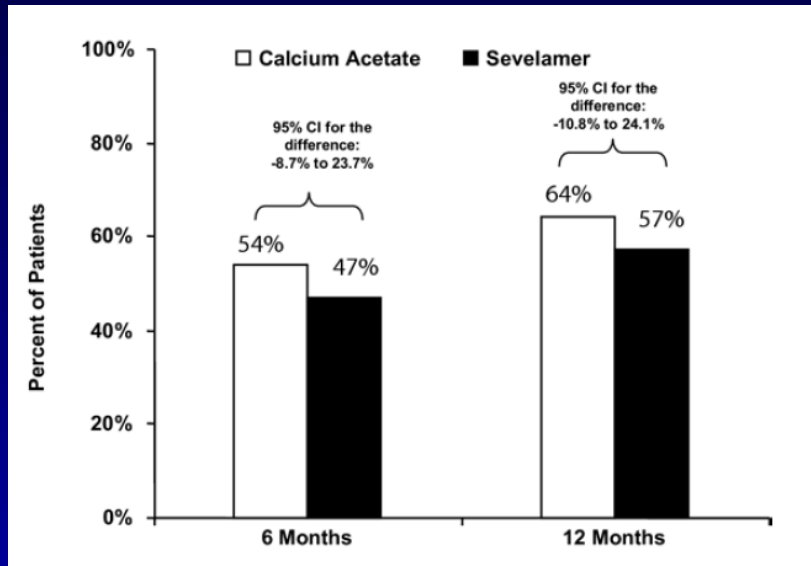
Wajeh Qunibi, MD,¹ Moustafa Moustafa, MD,² Larry R. Muenz, PhD,³ David Y. He, MS,³ Paul D. Kessler, MD,⁴ Jose A. Diaz-Buxo, MD,⁵ and Mathew Budoff, MD,⁶ on behalf of the CARE-2 Investigators

Ca-Acetat (n=103) vs. Sevelamer (n=100); PO₄: 3.5-5.5 mg/dl; LDL-C <70 mg/dl

Cardiovascular Calcification in Hemodialysis



Progression der CAC

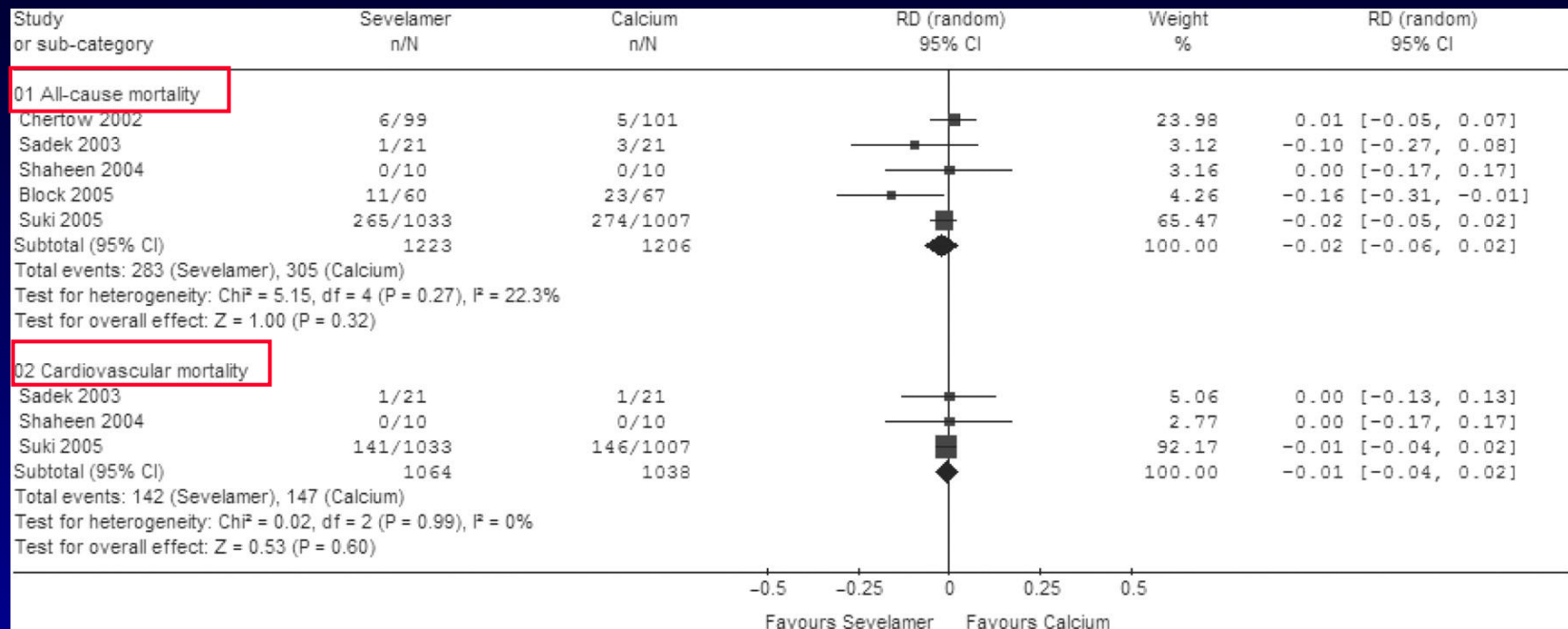


Anteil der Pts mit Progression der CAC

Systematic review of the clinical efficacy and safety of sevelamer in dialysis patients

Marcello Tonelli^{1,2,3,4}, Natasha Wiebe¹, Bruce Culleton⁵, Helen Lee⁶, Scott Klarenbach^{1,3,4}, Fiona Shrive⁶ and Braden Manns^{3,5,6} for the Alberta Kidney Disease Network

¹Department of Medicine, ²Division of Critical Care Medicine, ³Institute of Health Economics, ⁴Department of Public Health Sciences, University of Alberta, Edmonton, Alberta, Canada, ⁵Division of Nephrology, Department of Medicine and ⁶Department of Community Health Sciences, University of Calgary, Calgary, Alberta, Canada



„There was no evidence that sevelamer reduced all-cause or cardiovascular mortality.“

MBD-Targets: K/DOQI vs. KDIGO Empfehlungen



- Bei Patienten in den CKD-Stadien 3–5 und 5D, empfehlen die KDIGO Leitlinien den Einsatz von Phosphatbindern zur Therapie der Hyperphosphatämie.
- Bei der Auswahl der Phosphatbinder müssen CKD-Stadium, andere Störungen des Knochenstoffwechsels und das Nebenwirkungsprofil der Phosphatbinder berücksichtigt werden.

	K/DOQI (2003)	KDIGO (2009)
Serum-Phosphat	3,5-5,5 mg/dL 1,13-1,78 mmol/L	2,5-4,5 mg/dL 0,81-1,45 mmol/L
Serum-Calcium	8,4-9,5 mg/dL 2,1-2,37 mmol/L	8,5-10,5 mg/dL 2,1-2,6 mmol/L
Aufnahme elementares Calcium/d	1.500 mg	-
Ca x P	< 55 mg ² /dL ² < 4,48 mmol ² /L ²	-
PTH	150-300pg/mL 18,5-33 pmol/L	2-9fach PTH-Obergrenze

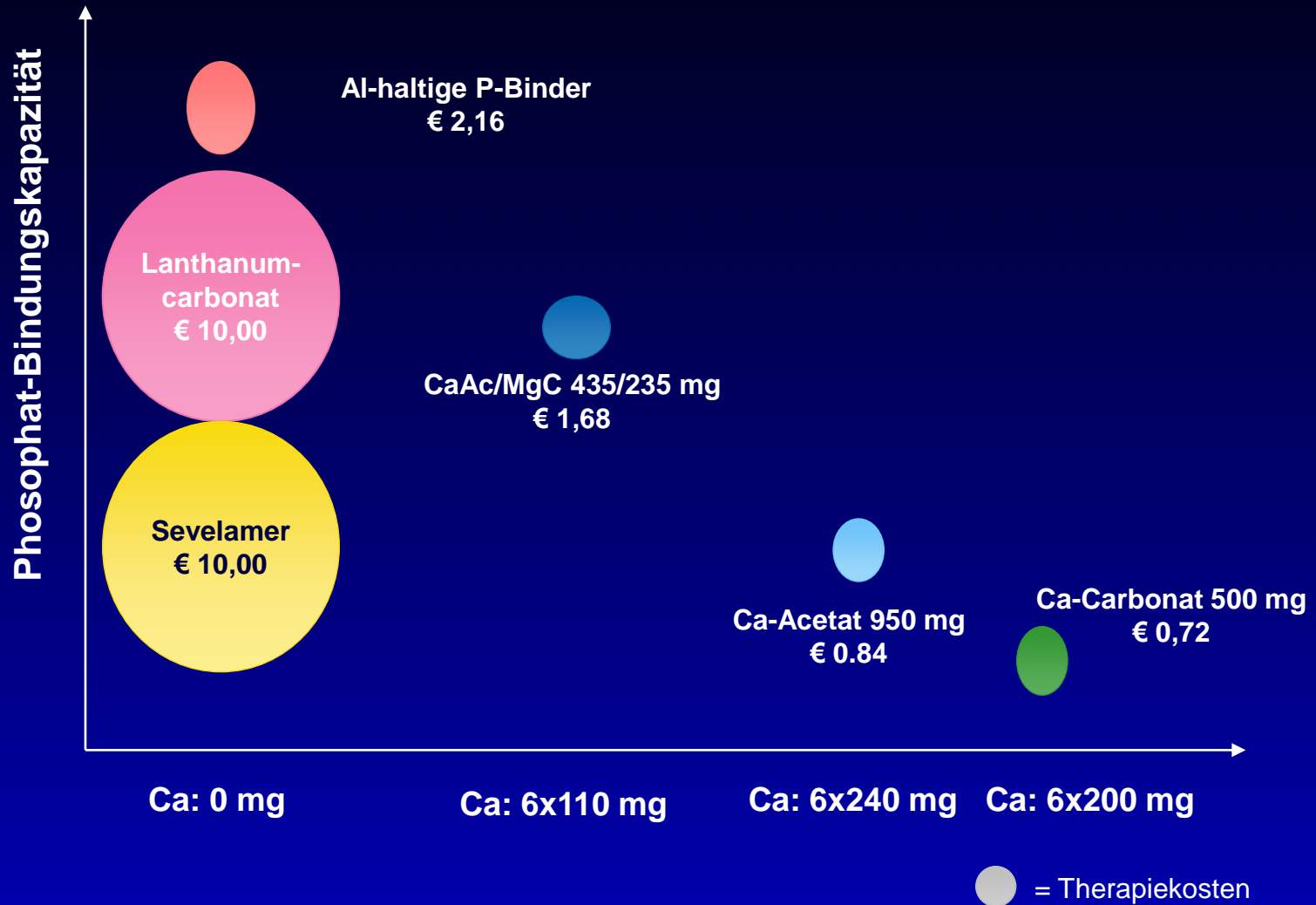
MBD-Targets: KDIGO Empfehlungen

Der Einsatz von Ca-haltigen PO₄-Bindern sollte eingeschränkt werden bei:

- Bestehender / rekurrenter Hypercalcämie
- Konstant niedrigen PTH-Werten
- Arterieller Calcifizierung
- Adynamer Knochenkrankung



PO₄-Binder: Ca-load & Tagestherapiekosten



Conclusions: Ca-haltige Phosphatbinder

- Calcium-Acetat: *First-line* Therapie der Hyperphosphatämie
- Ca-Beladung beachten, ggf. kombinieren
- CaAcetat/MgCarbonat: Einzige Fixkombination
 - 50% weniger Ca als bei Ca-Acetat
 - P-Bindungskapazität wie Ca-Acetat 950 mg
- Ca-frei bei: Ca \uparrow , PTH \downarrow , adyn. Knochen, Calcifikationen