



VALVULAR DISEASE IN CKD/ESRD

KDIGO

Mohamed Marwan
Cardiologist
University Hospital Erlangen

DISCLOSURES

- Speaker Honoraria Siemens Healthineers and Edwards Lifesciences

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CONSIDERATIONS

- Differences compared to normal population ?
- Influence of CKD on natural history of valvular disease
- Diagnostics
- Prevention
- Challenges in interventional/surgical treatment
- Valvular disease and oral anticoagulation in the setting of CKD/ESRD

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CARDIOVASCULAR DISEASE IN CKD/ESRD PATIENTS

- Two to four times likelihood of cardiovascular disease compared to general population
- Leading cause of Mortality in this cohort
- Pathophysiology mainly related to vascular and valvular calcifications

CARDIOVASCULAR DISEASE IN CKD/ESRD PATIENTS

Global Cardiovascular and Renal Outcomes of Reduced GFR

Global Burden of Disease 2013 GFR Collaborators, CKD Prognosis Consortium, and Global Burden of Disease Genitourinary Expert Group
 Due to the number of contributing authors, the authors and affiliations are listed at the end of this article.

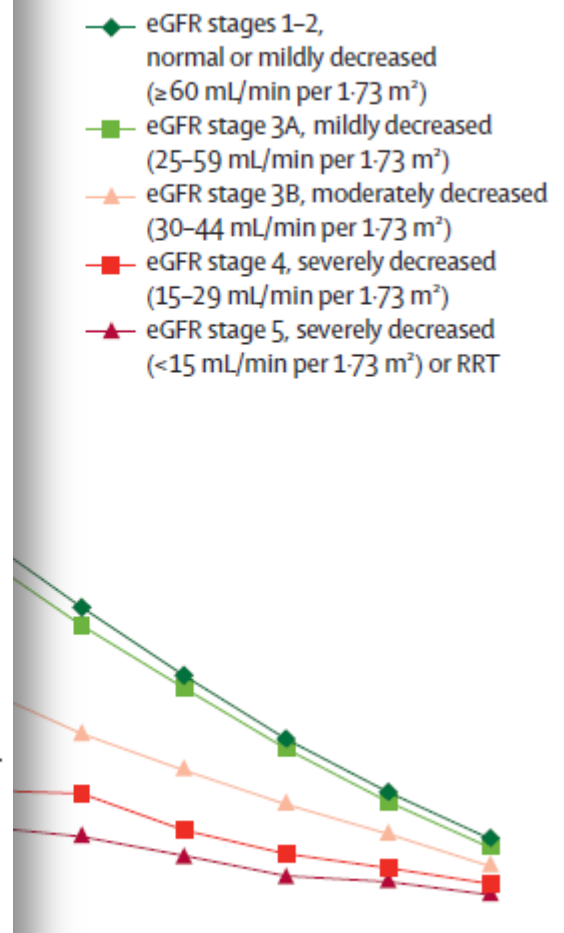
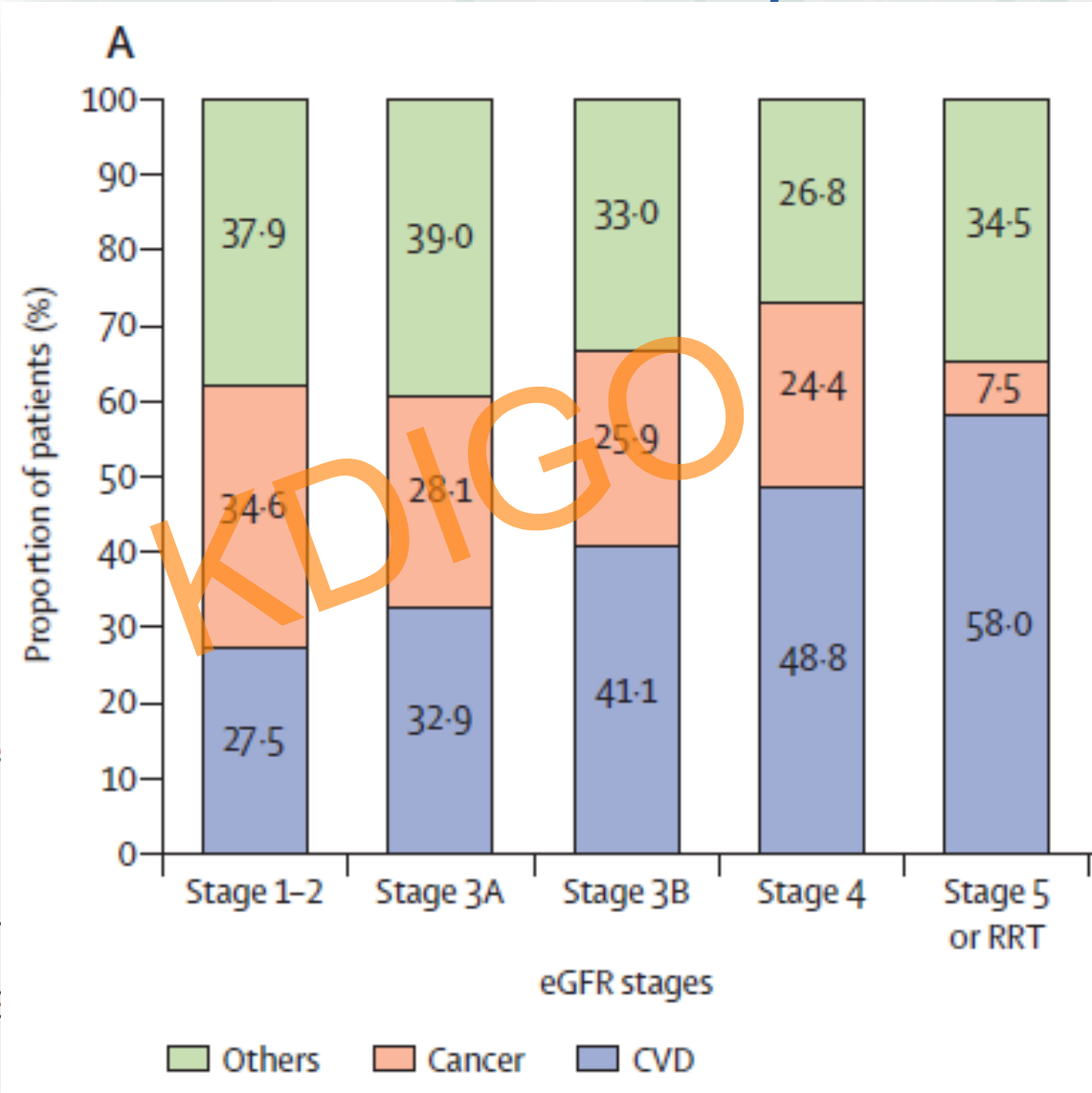
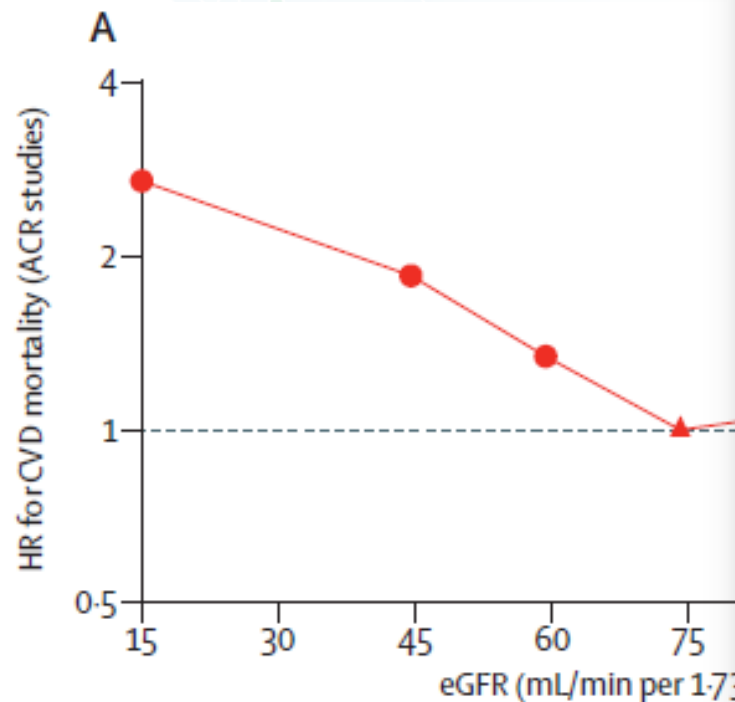
World Region

Table 2. CV and CKD mortality attributable to reduced GFR in 2013

World Region	CV Disease	
	GFR-Attributable Counts among All Ages	AS GFR-Attributable Rate per 100,000
Global	1,207,453 (1,049,528 to 1,400,049)	20.8 (18.1 to 24.1)
Developed	465,696 (389,760 to 544,138)	19.2 (16.2 to 22.2)
Developing	741,757 (629,223 to 884,731)	21.5 (18.0 to 25.5)

CARDIOVASCULAR DISEASE IN CKD/ESRD PATIENTS

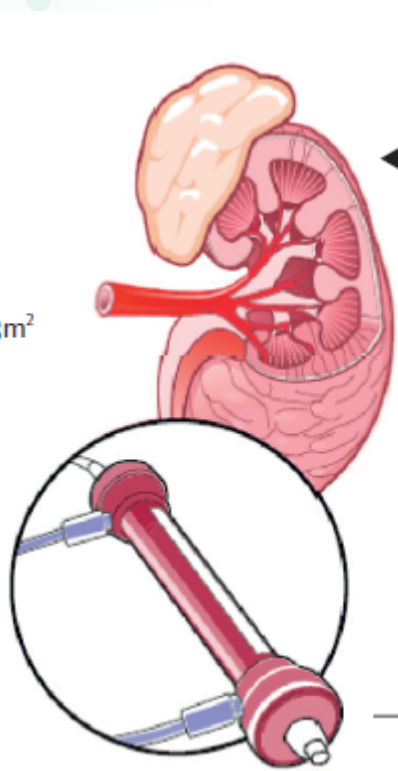
- 949 119 patients



CARDIOVASCULAR DISEASE

- Interaction Heart and Kidney

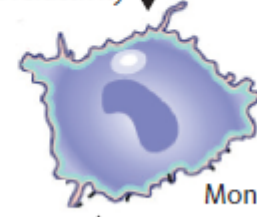
Severe CKD
 eGFR <30 mL/min per 1.73m²
 or requirement for RRT



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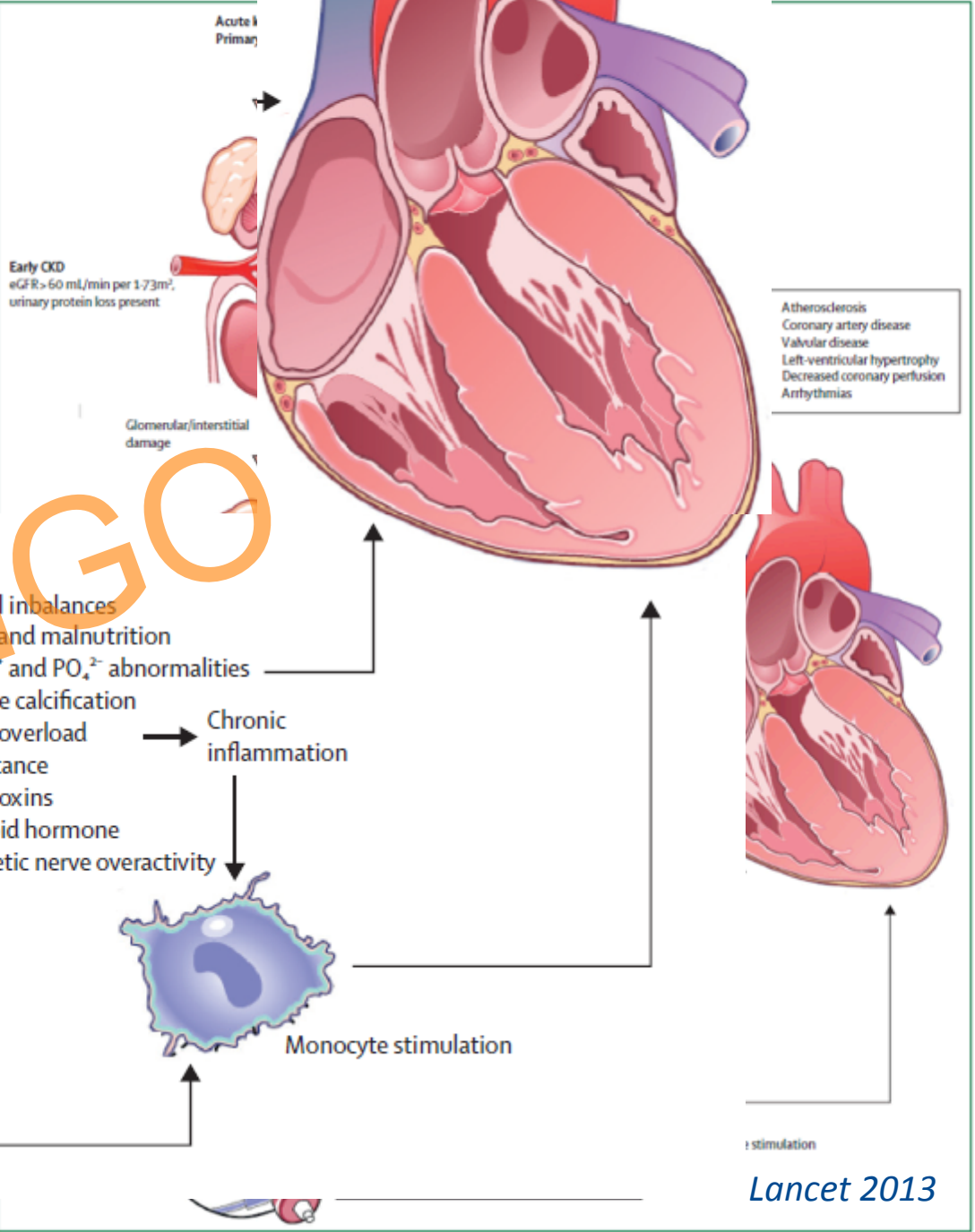
Hormonal imbalances
 Anaemia and malnutrition
 Severe Ca²⁺ and PO₄²⁻ abnormalities
 Soft-tissue calcification
 NA⁺+H₂O overload
 EPO resistance
 Uraemic toxins
 Parathyroid hormone
 Sympathetic nerve overactivity

Chronic inflammation



Monocyte stimulation

RRT-related:
 artificial surfaces,
 contaminated fluids



Atherosclerosis
 Coronary artery disease
 Valvular disease
 Left-ventricular hypertrophy
 Decreased coronary perfusion
 Arrhythmias

stimulation

Lancet 2013



VALVULAR AFFECTION IN CKD/ESRD PATIENTS

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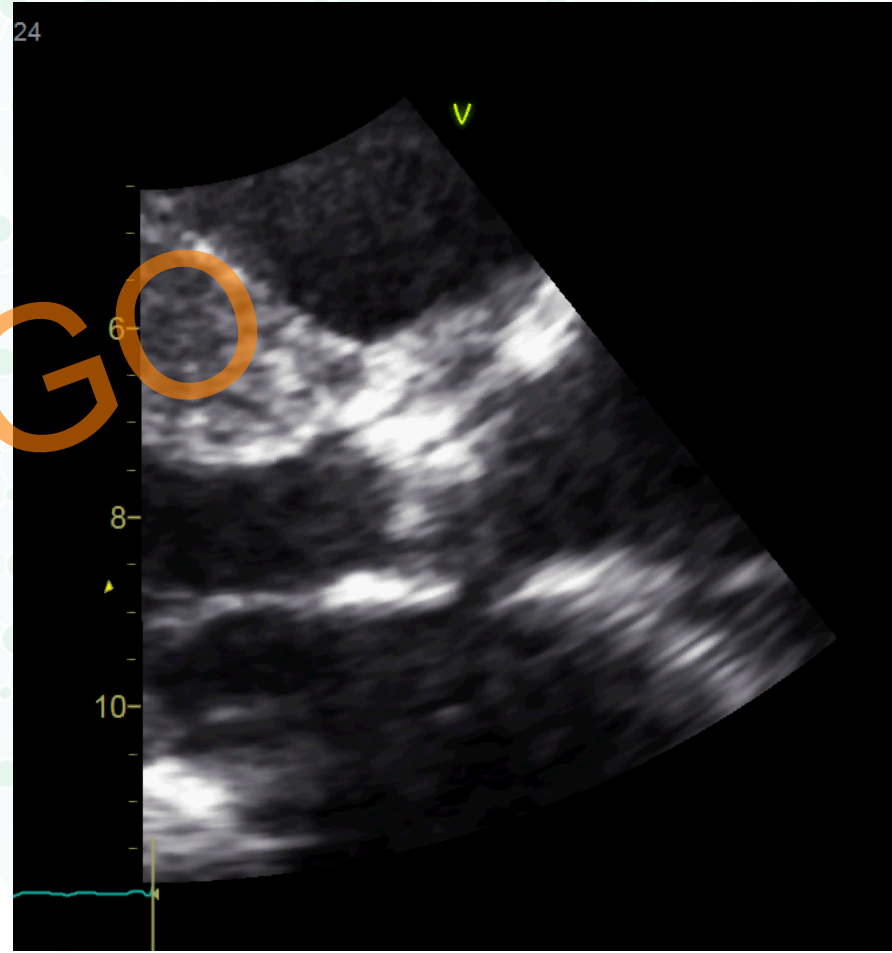
VALVULAR AFFECTION IN CKD/ESRD PATIENTS

- Primarily triggered by valvular calcification
- Left sided valve affection due to higher mechanical stress
- Aortic position causing predominantly stenosis
- Mitral position causing leaflet restriction/calcification presenting more frequently with mitral regurgitation and mitral stenosis

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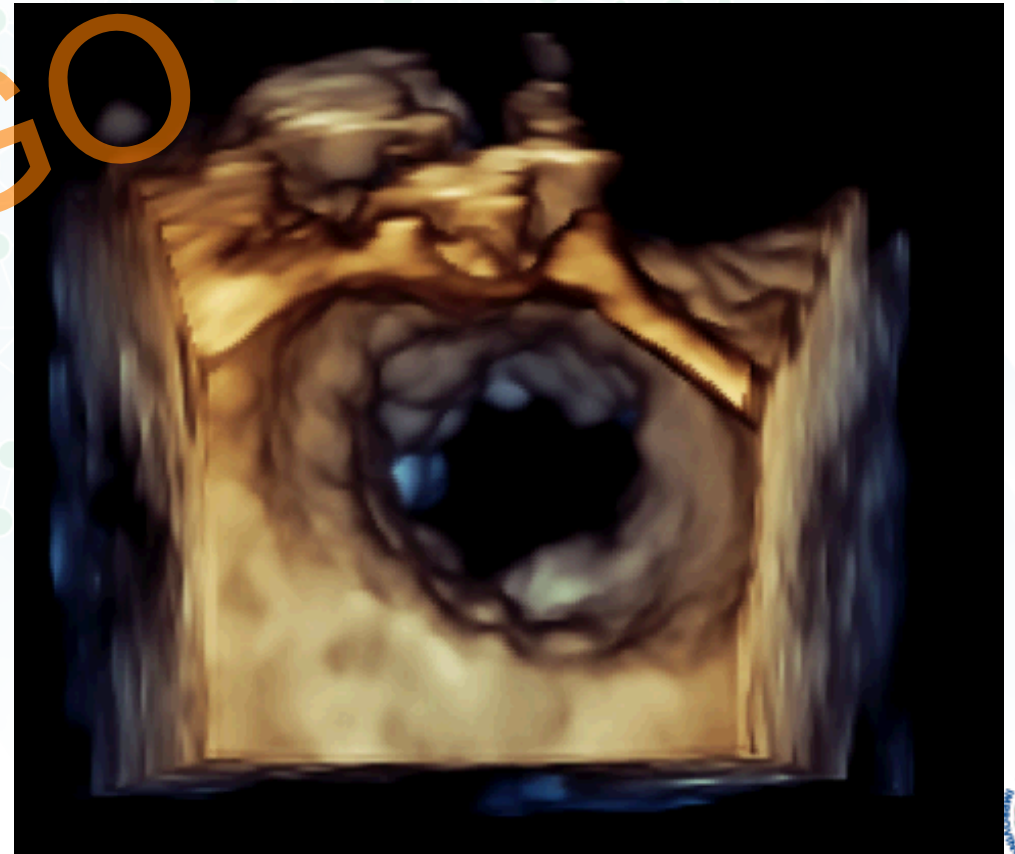
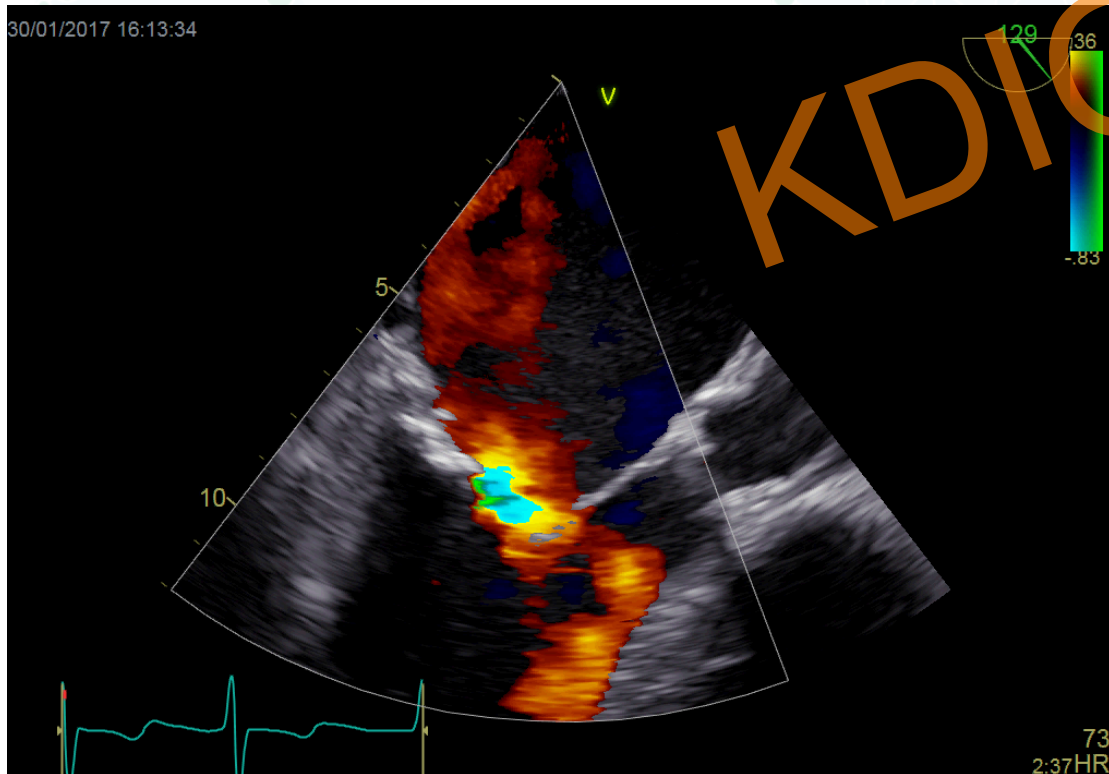
VALVULAR AFFECTION IN CKD/ESRD PATIENTS

- AS → Calcification



VALVULAR AFFECTION IN CKD/ESRD PATIENTS

- MR → Calcification of the annulus, mitral valve apparatus, chordae causing primary MR



VALVULAR AFFECTION IN CKD/ESRD PATIENTS

- MR → Calcification of the annulus, mitral valve apparatus, chordae causing primary MR
- MR → Poor LV functions due to concomitant CAD ,secondary MR

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VALVULAR AFFECTION IN CKD/ESRD PATIENTS

- Right sided heart more context of pulmonary h

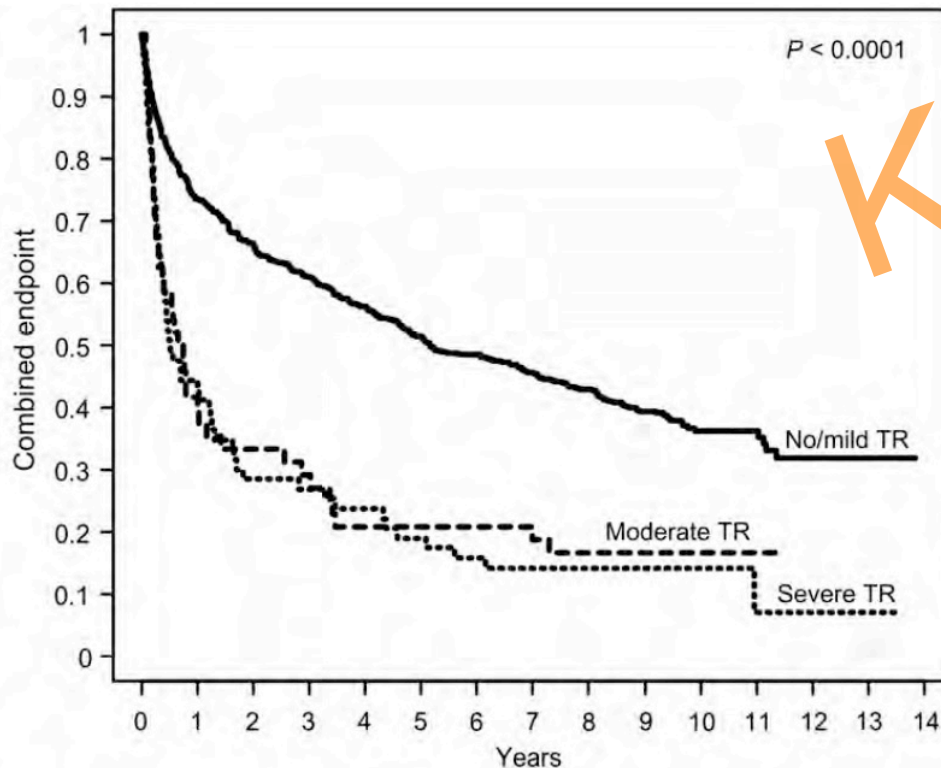


European Heart Journal (2013) 34, 844–852
doi:10.1093/eurheartj/ehs465

CLINICAL RESEARCH
Heart failure/cardiomyopathy

Impact of tricuspid regurgitation on survival in patients with chronic heart failure: unexpected findings of a long-term observational study

Stephanie Neuhold^{1,2}, Martin Huelsmann^{1*}, Elisabeth Pernicka³, Alexandra Graf³, Ina Bonderman¹, Christopher Adlbrecht¹, Thomas Binder¹, Gerald Maurer¹, Gerd Pacher¹, and Julia Mascherbauer¹



Conclusion

The impact of TR on the outcome in CHF patients depends on the severity of heart failure. While TR provides no additive value in advanced disease, it is associated with excess mortality in mild to moderate CHF. Whether these patients may benefit from surgical correction of TR has to be addressed in further prospective, randomized studies.

AORTIC VALVE AFFECTION IN CKD/ESRD PATIENTS

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AORTIC VALVE AFFECTION IN CKD/ESRD PATIENTS

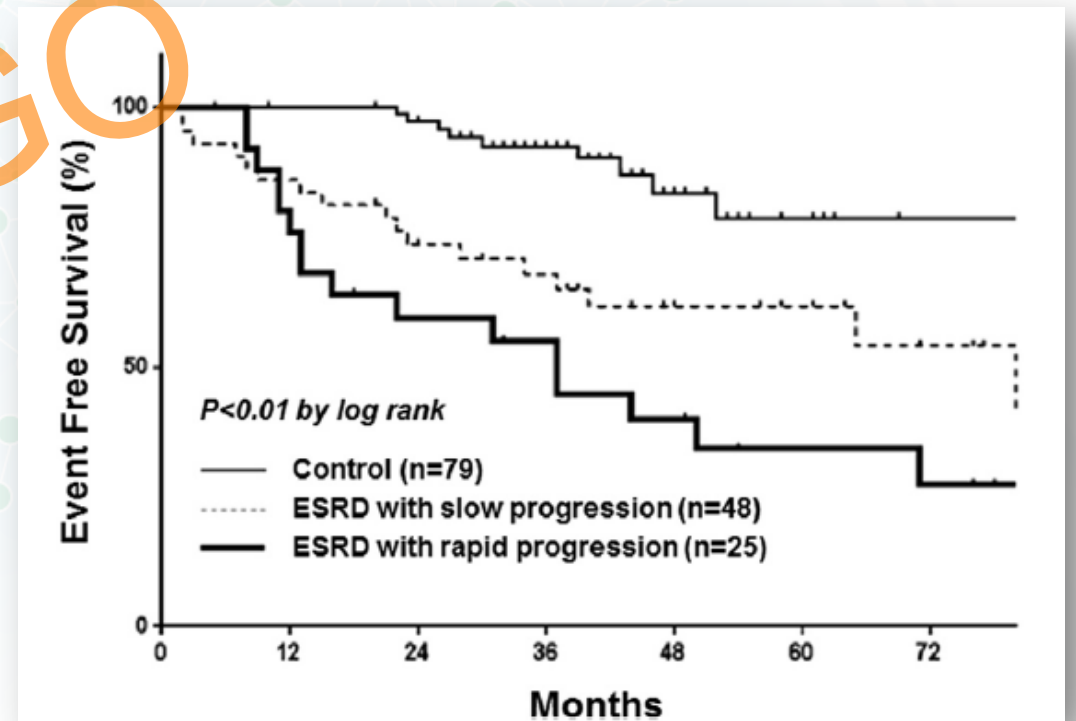
- Increased calcium deposition
- The natural history of disease is different than AS in non-CKD population: accelerated progression, younger presentation

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Effect of End-Stage Renal Disease on Rate of Progression of Aortic Stenosis



Darae Kim, MD, Chi Young Shim, MD, PhD*, Geu-Ru Hong, MD, PhD, In Jeong Cho, MD, Hyuk-Jae Chang, MD, PhD, Jong-Won Ha, MD, PhD, and Namsik Chung, MD, PhD



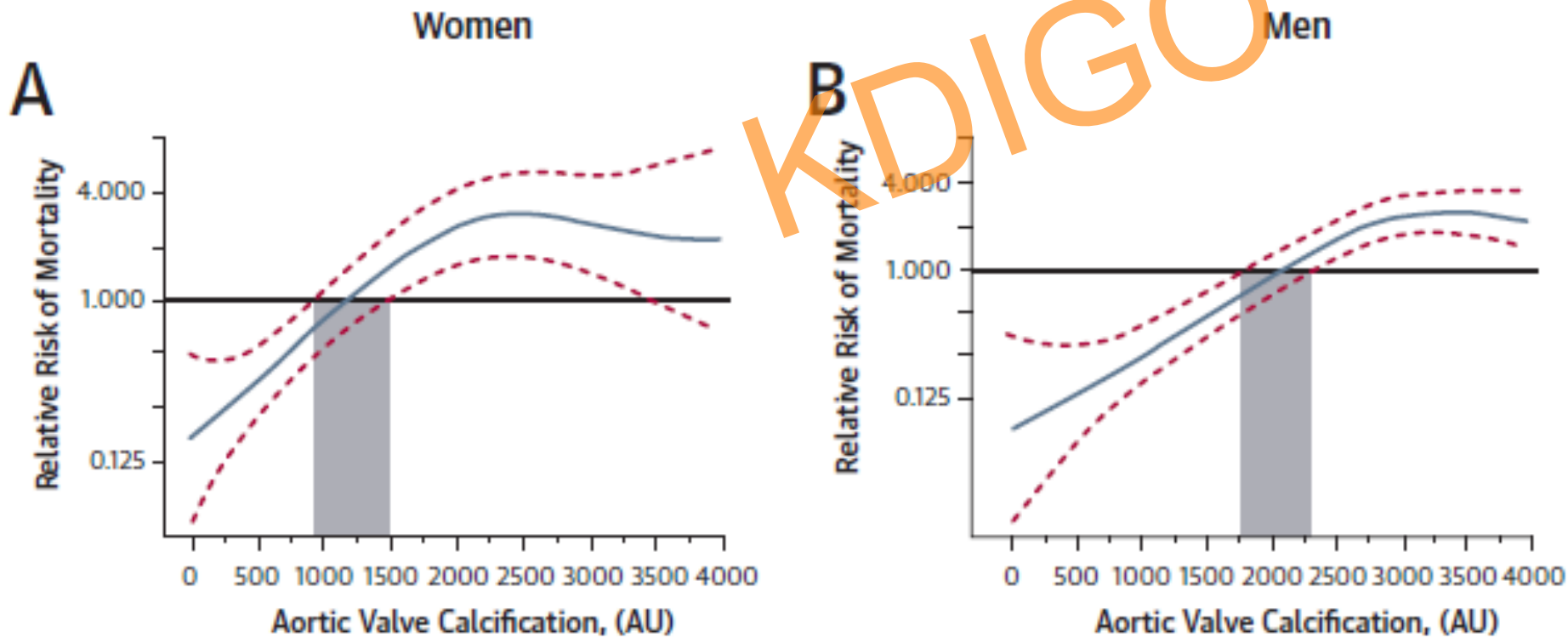
AORTIC VALVE AFFECTION IN CKD/ESRD PATIENTS

- Calcium is related to outcome

Impact of Aortic Valve Calcification, as Measured by MDCT, on Survival in Patients With Aortic Stenosis

Results of an International Registry Study

Marie-Annick Clavel, DVM, PhD,* Philippe Pibarot, DVM, PhD,† David Messika-Zeitoun, MD, PhD,‡§
Romain Canoulade, PhD,† Iosneh Malouf, MD,* Shivani R. Aggarwal, MBBS,* Phillip A. Araoz, MD,*
Cristina M. Valverde, MD, PhD,† Jordan D. Miller, PhD,* Alec Vahanian, MD,‡§



AORTIC VALVE AFFECTION IN CKD/ESRD PATIENTS

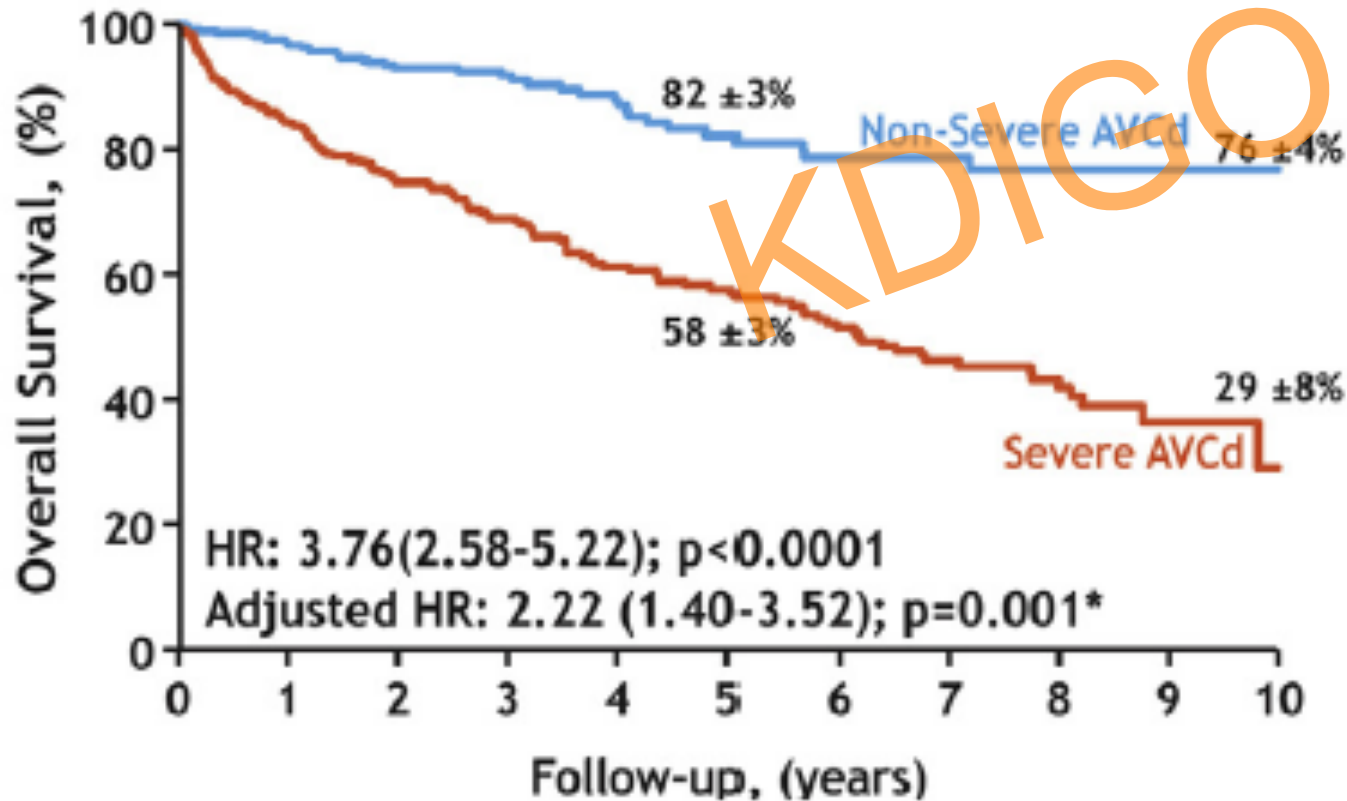
- Calcium is related to outcome

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PhD,* Alec Vahanian, MD,^{†§}



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JACC 2014

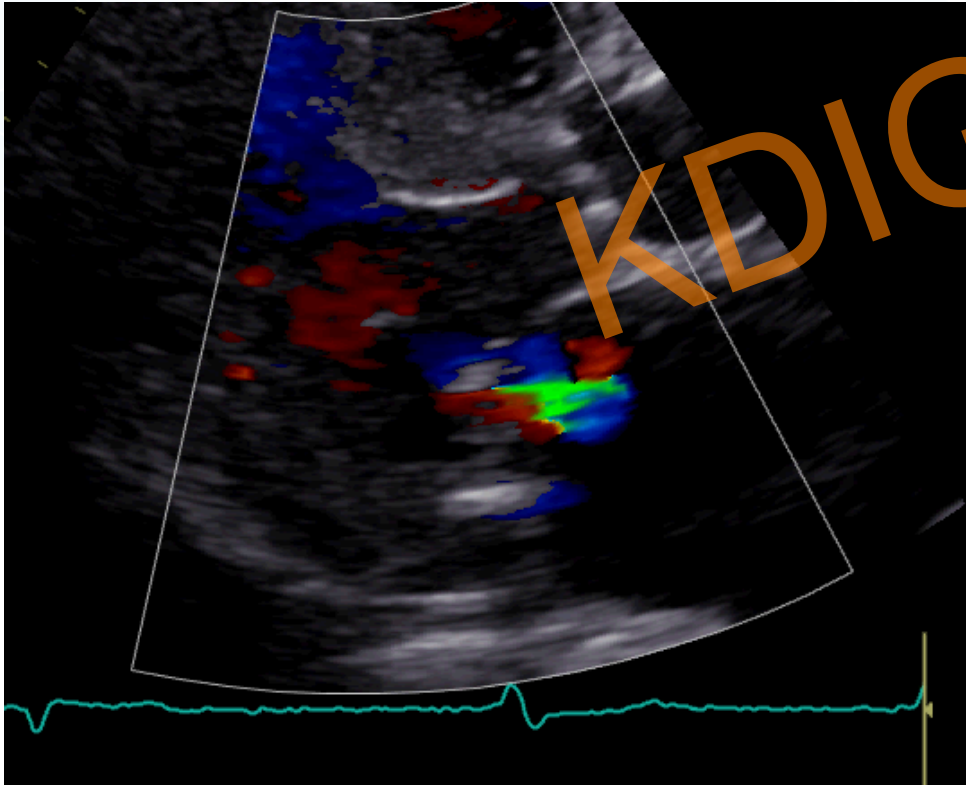


MITRAL VALVE AFFECTION IN CKD/ESRD PATIENTS

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MITRAL VALVE AFFECTION IN CKD/ESRD PATIENTS

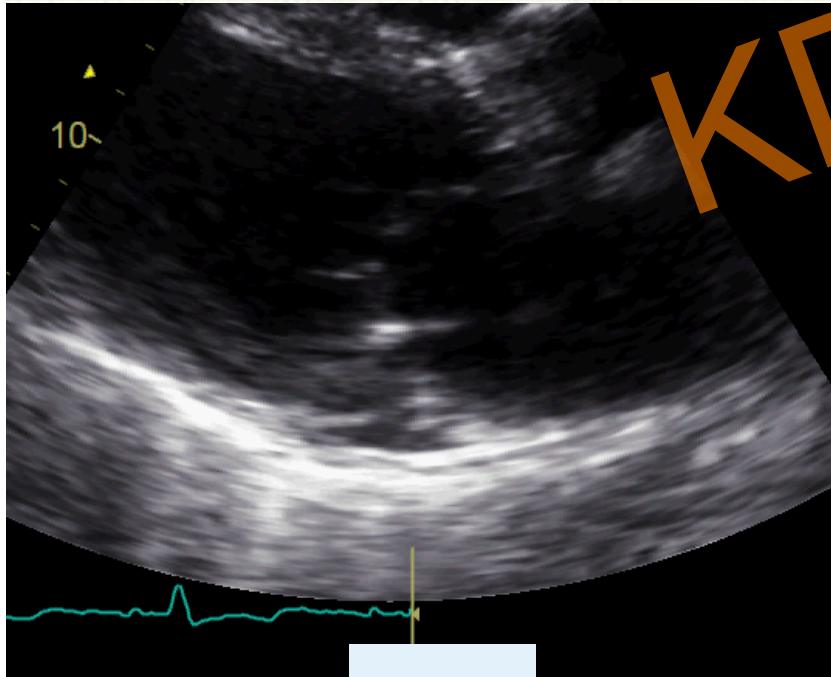
- Mitral annular calcification with varying severity causing regurgitation or stenosis



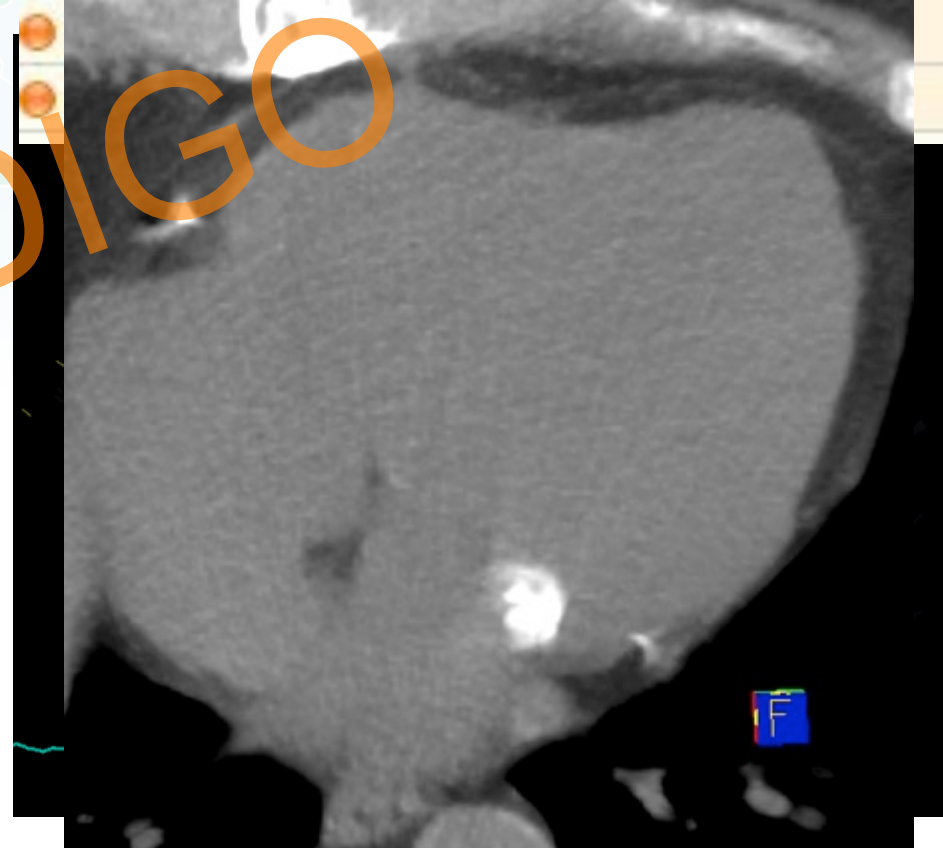
MITRAL VALVE AFFECTION IN CKD/ESRD PATIENTS

- Embolic manifestations especially in severe forms of MAC (Caseous mitral valve calcification)

<input type="radio"/> Kreatinin	1.03
<input type="radio"/> eGFR (geschätzt MDRD-Formel)	> 60



2012

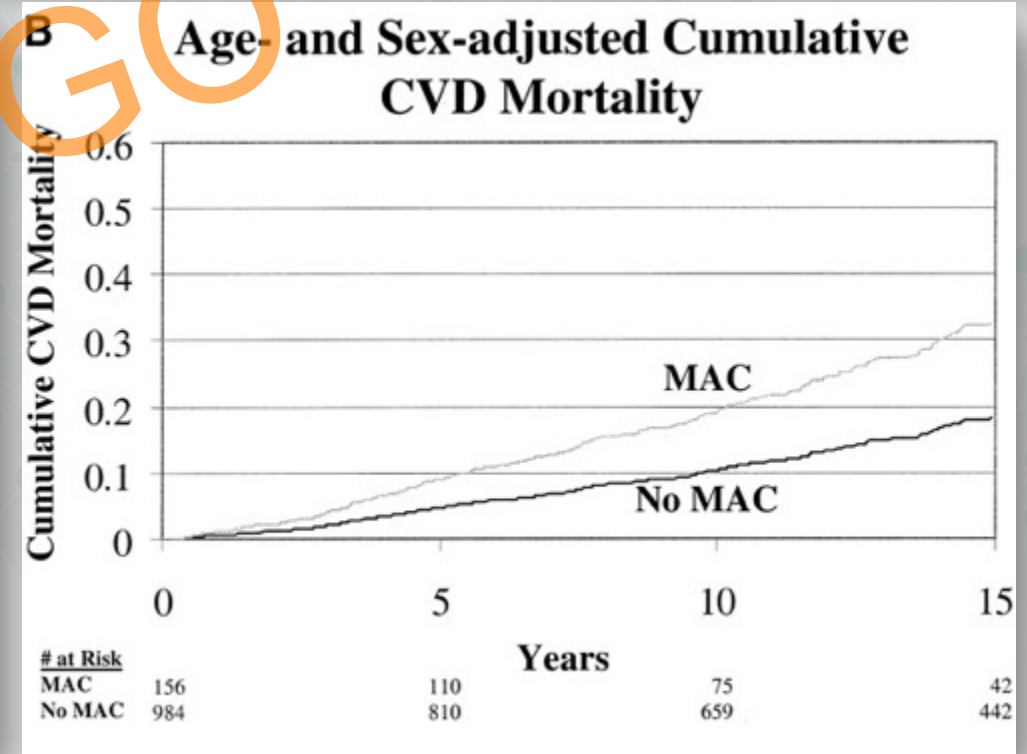
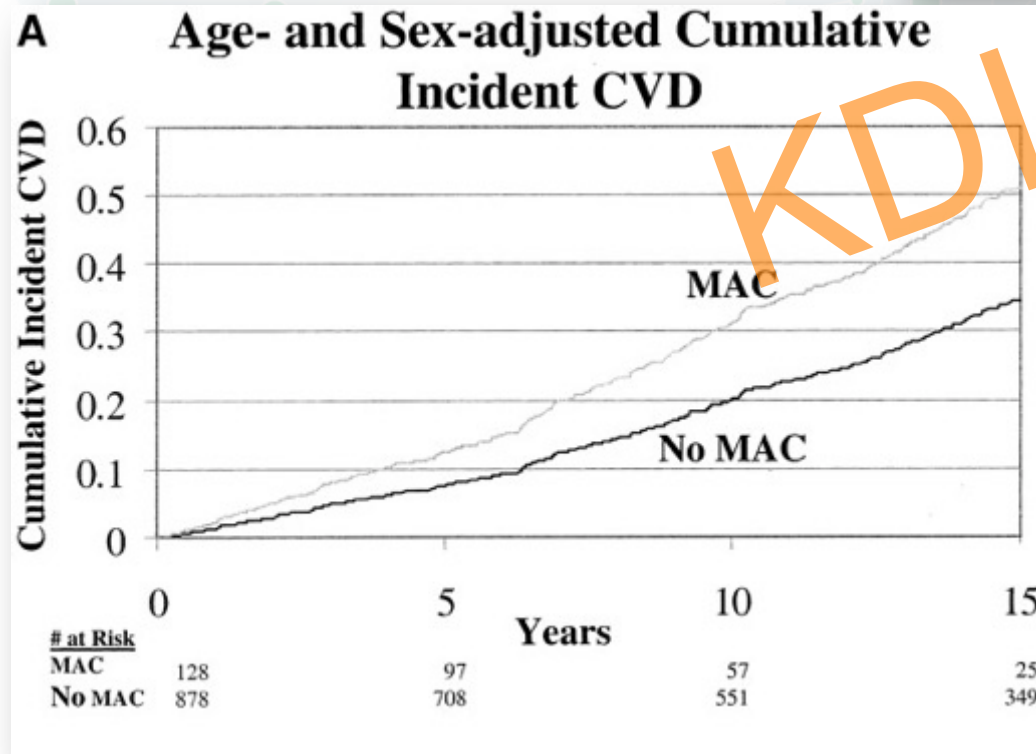


MITRAL VALVE AFFECTION IN CKD/ESRD PATIENTS

- MAC associated with CVD morbidity and mortality

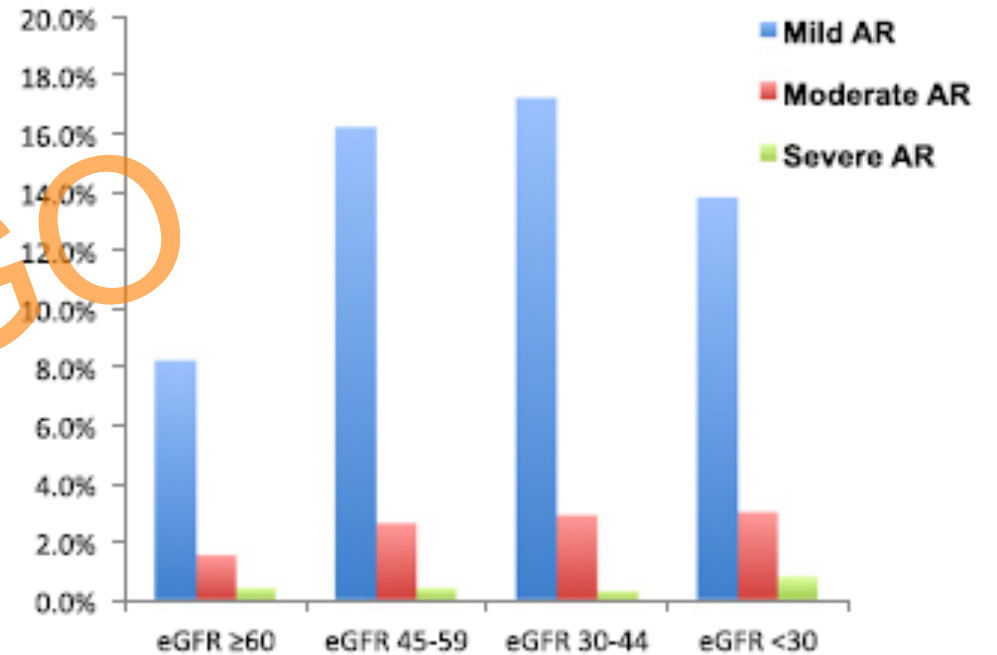
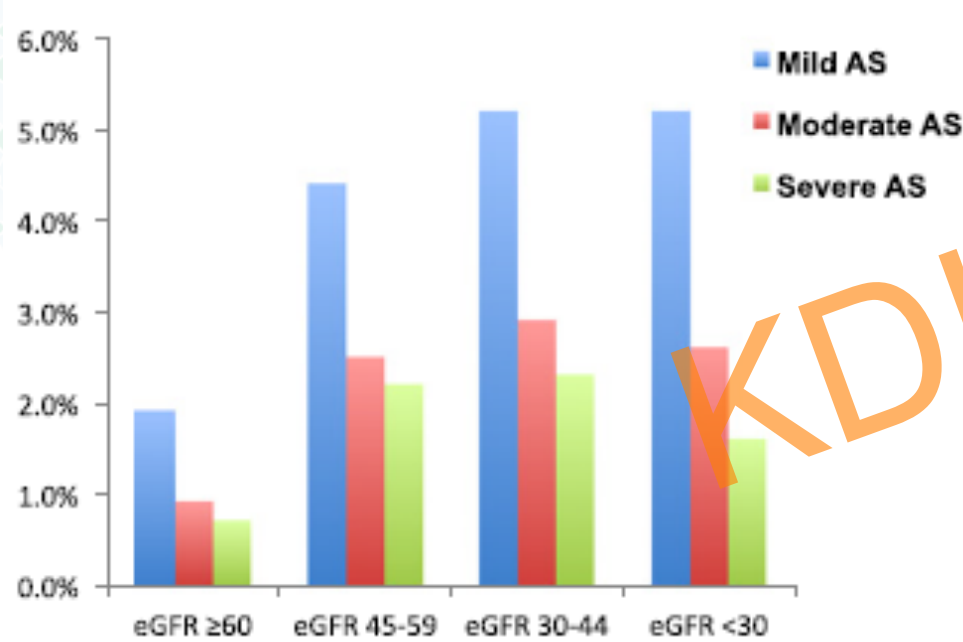
Mitral Annular Calcification Predicts Cardiovascular Morbidity and Mortality The Framingham Heart Study

Caroline S. Fox, MD, MPH; Ramachandran S. Vasan, MD; Helen Parise, ScD; Daniel Levy, MD; Christopher J. O'Donnell, MD, MPH; Ralph B. D'Agostino, PhD; Emelia J. Benjamin, MD, ScM



PREVALENCE OF LEFT-SIDED VALVULAR LESIONS IN CKD

- Longitudinal data from 1999 to 2013, 78 059 patients, 30% CKD

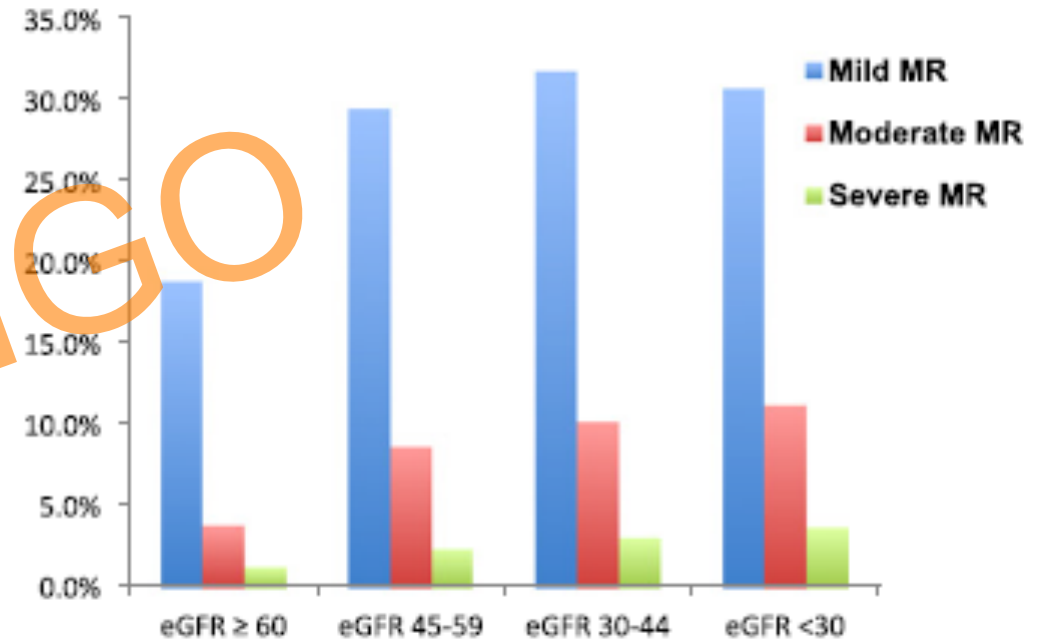
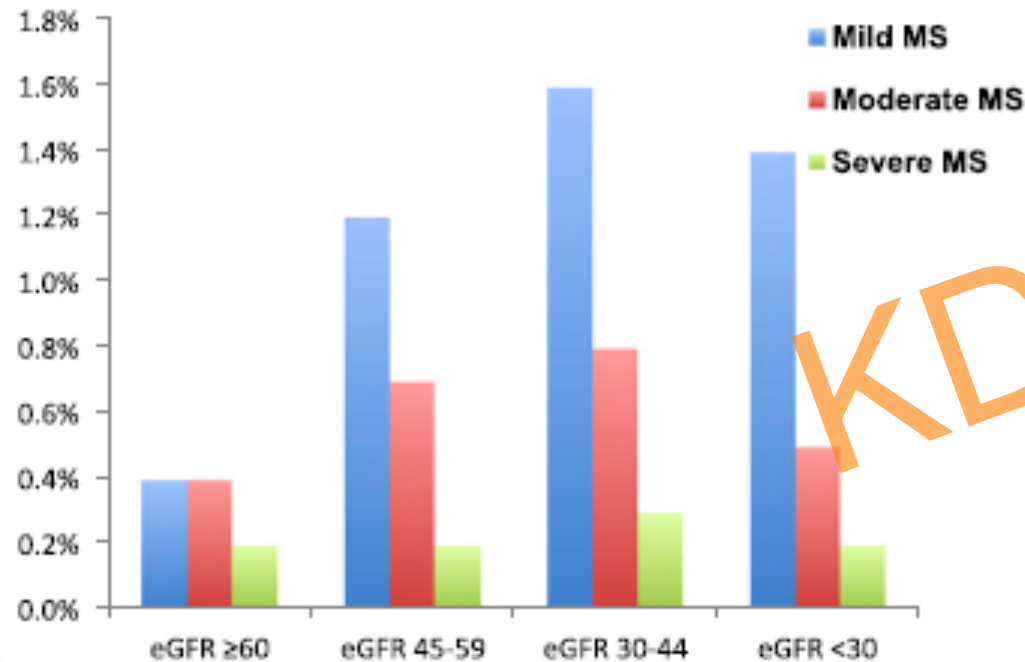


Prevalence and Outcomes of Left-Sided Valvular Heart Disease Associated With Chronic Kidney Disease

Zainab Samad, MD, MHS; Joseph A. Sivak, MD; Matthew Phelan, MS; Phillip J. Schulte, PhD; Uptal Patel, MD; Eric J. Velazquez, MD

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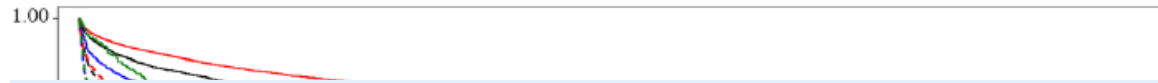
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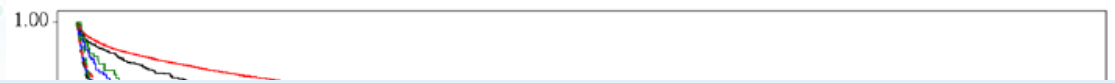
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B Kaplan Meier curves for all levels of Mitral Regurgitation

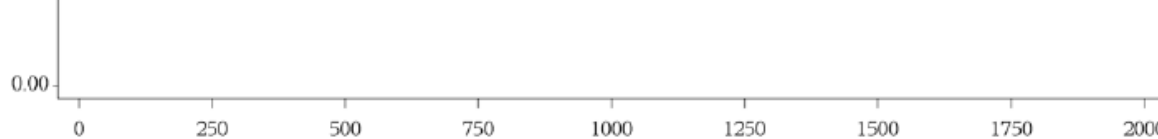


B Kaplan Meier curves for all levels of Aortic Stenosis

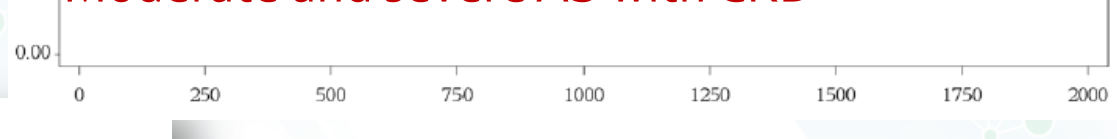


- The prevalence of at least mild left-sided valvular disease in the CKD group was more than double that in the non-CKD
- The 5-year mortality rate of patients with at least mild AS/MR was > 50% greater in the CKD group than in the non-CKD group

Moderate and severe MR with CKD



Moderate and severe AS with CKD



Prevalence and Outcomes of Left-Sided Valvular Heart Disease Associated With Chronic Kidney Disease

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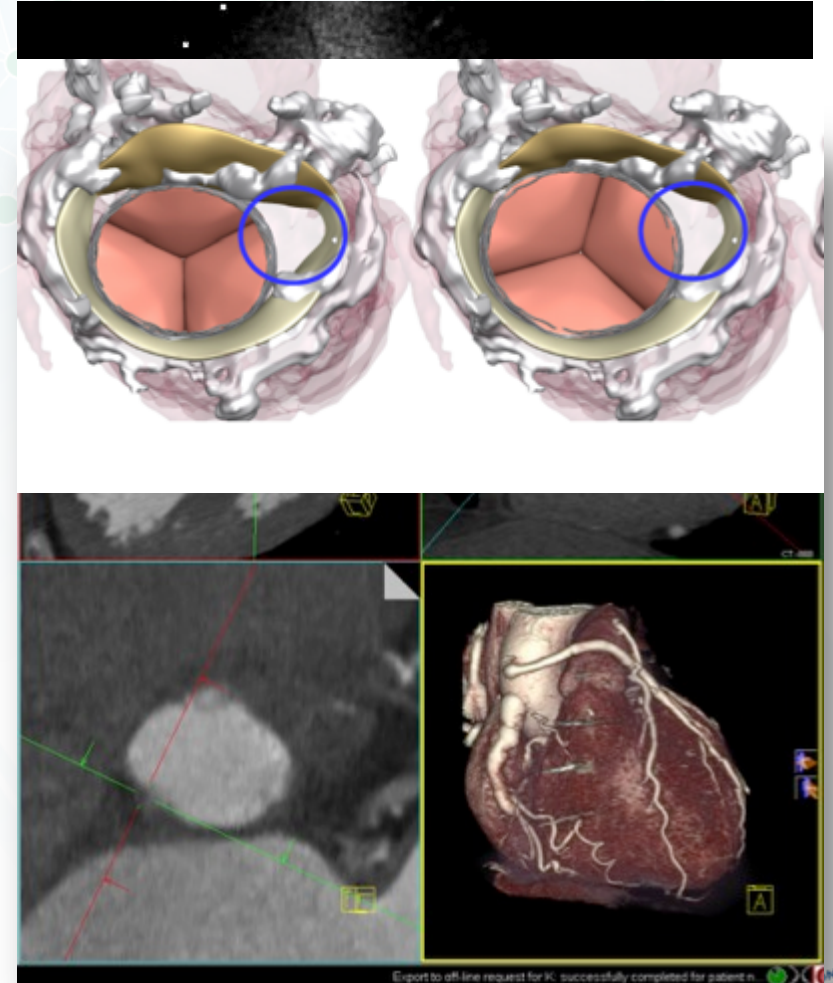
DIAGNOSTIC IMAGING IN CKD/ESRD PATIENTS

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DIAGNOSTIC IMAGING IN CKD/ESRD PATIENTS

- Clearly a domain of echocardiography
- CT: transcatheter intervention
- MRI: only aortic regurgitation

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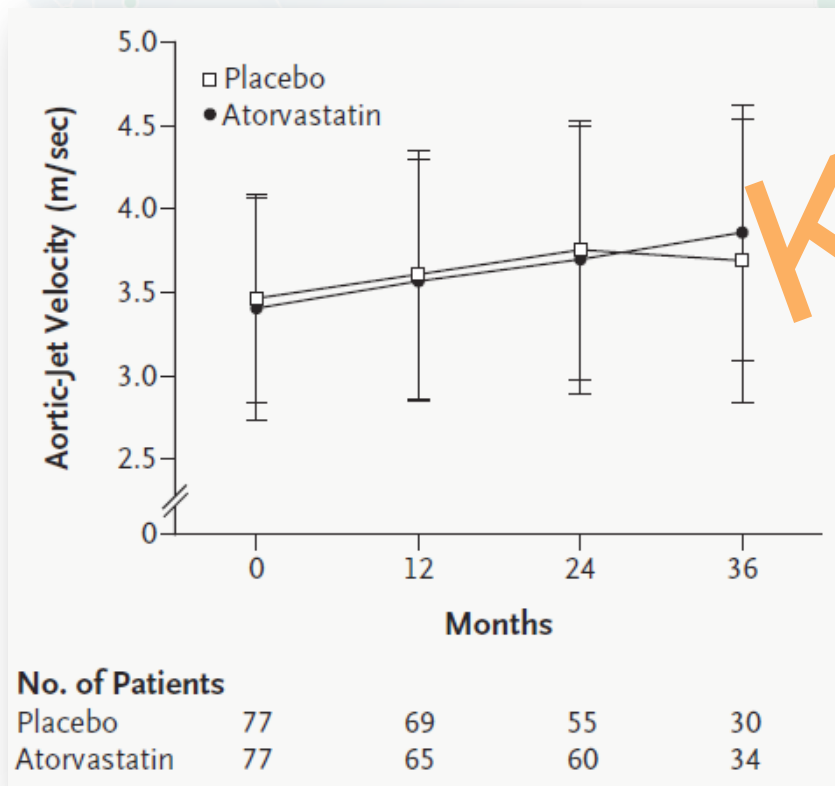


PREVENTIVE STRATEGIES IN CKD/ESRD PATIENTS

- Clustering of cardiovascular risk factors in this patient cohort
- Common disease pathways for kidney and cardiovascular disease
- Whether strict control of risk factors has the same benefit/ effect in CKD and non-CKD is not entirely clear
- Screening for valvular lesions in symptomatic patients

PREVENTIVE STRATEGIES IN CKD/ESRD PATIENTS

- STATINS for AS: have not proved beneficial so far in general population and Data can probably be extrapolated to CKD



ORIGINAL ARTICLE

A Randomized Trial of Intensive Lipid-Lowering Therapy in Calcific Aortic Stenosis

S. Joanna Cowell, B.M., David E. Newby, M.D., Robin J. Prescott, Ph.D., Peter Bloomfield, M.D., John Reid, M.B., Ch.B., David B. Northridge, M.D., and Nicholas A. Boon, M.D., for the Scottish Aortic Stenosis and Lipid Lowering Trial, Impact on Regression (SALTIRE) Investigators

TREATMENT OF VALVULAR DISEASE

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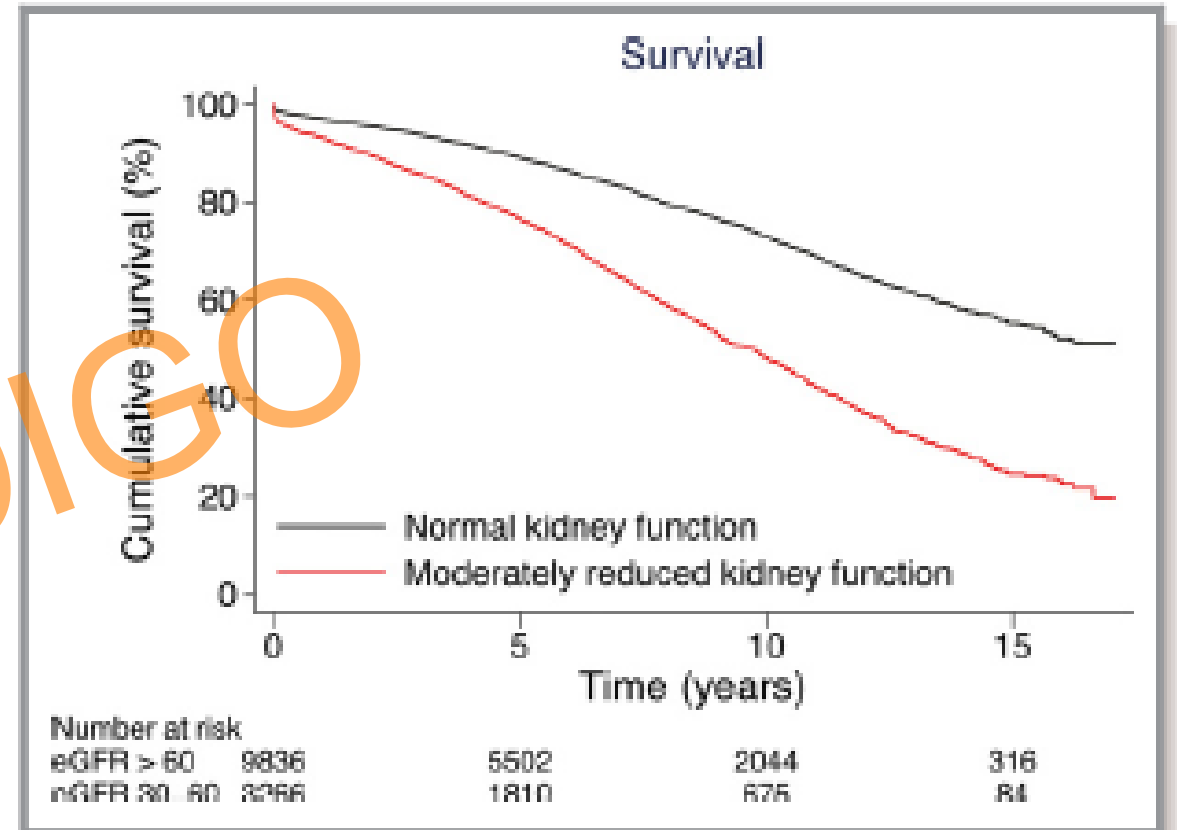
TREATMENT OF VALVULAR DISEASE

- Data gap : Insufficient data for guidelines concerning management and follow-up in these patients
- More treatment options with the advent of percutaneous catheter interventions
- Better definition of which CKD/ESRD patients would benefit most and which time point from intervention

TREATMENT OF AORTIC STENOSIS

- Surgery for Aortic stenosis
- 3266 patients with moderate CKD

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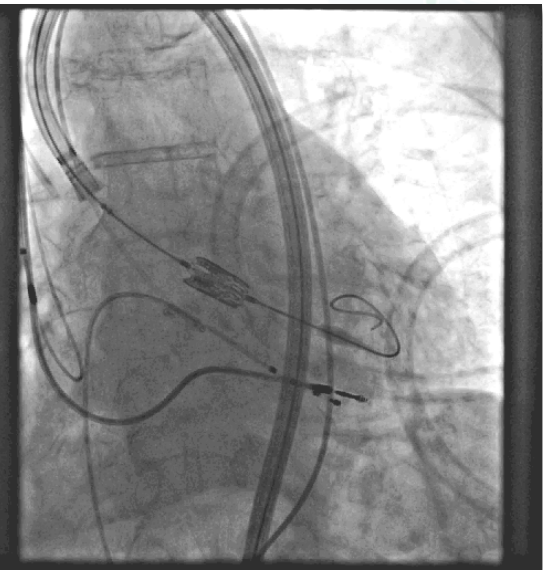
Late Survival After Aortic Valve Replacement Moderately Reduced Kidney Function

Natalie Glaser, MD; Veronica Jackson, MD, PhD; Martin J. Holzmann, MD, PhD; Anders Franco-Cereceda, MD, PhD; Ulrik Sartipy, MD, PhD

TREATMENT OF AORTIC STENOSIS

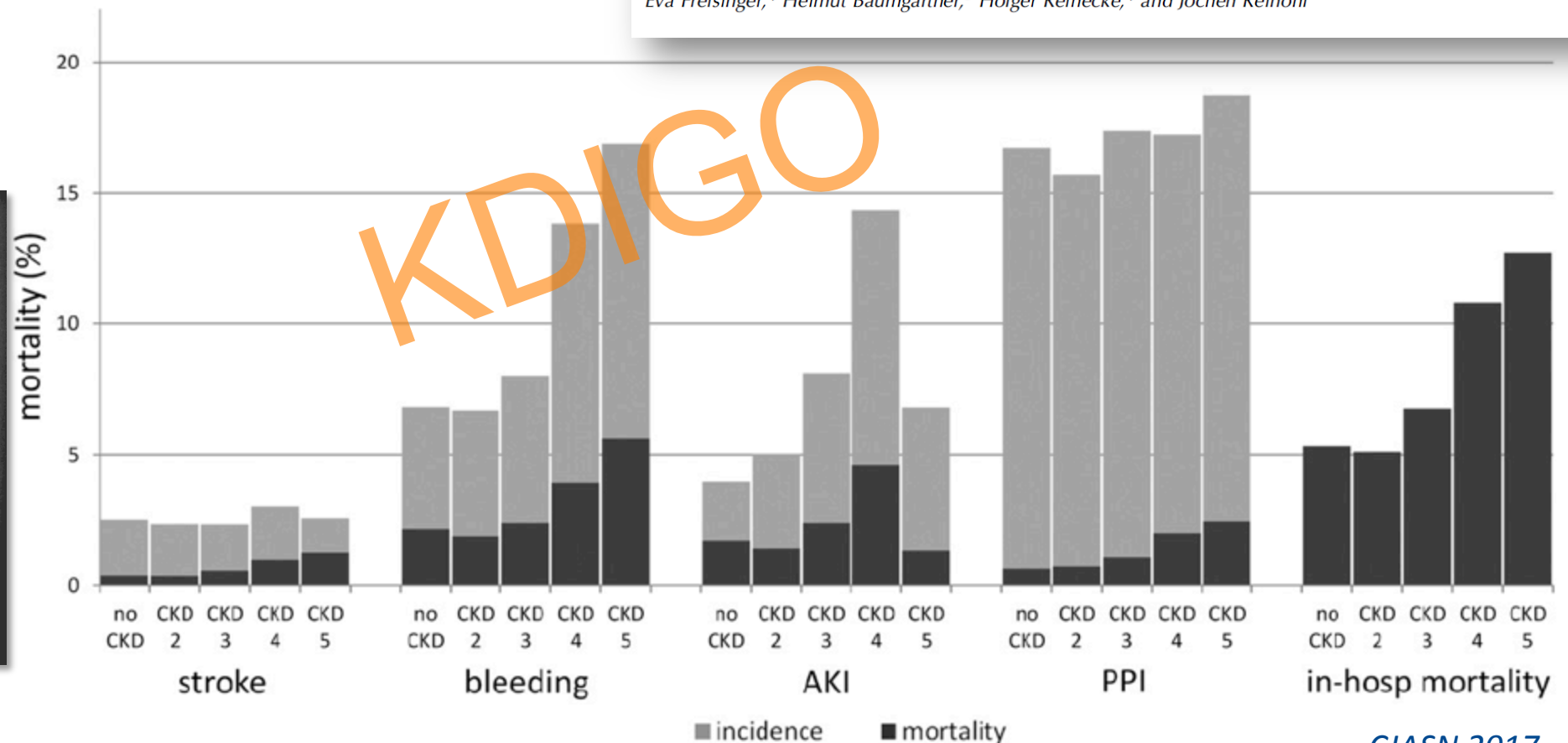
- TAVI/TAVR for Aortic stenosis in Germany

28 716 patients



Association of CKD with Outcomes Among Patients Undergoing Transcatheter Aortic Valve Implantation

Florian Lüders,* Klaus Kaier,^{†‡} Gerrit Kaleschke,[§] Katrin Gebauer,* Matthias Meyborg,* Nasser M. Malyar,* Eva Freisinger,* Helmut Baumgartner,[§] Holger Reinecke,* and Jochen Reinöhl[†]



TAVI/TAVR VERSUS SURGICAL REPLACEMENT

Transcatheter or surgical aortic valve replacement in patients with advanced kidney disease: A propensity score-matched analysis

Rajkumar Doshi¹  | Jay Shah² | Vaibhav Patel¹ | Varun Jauhar¹ | Perwaiz Meraj¹

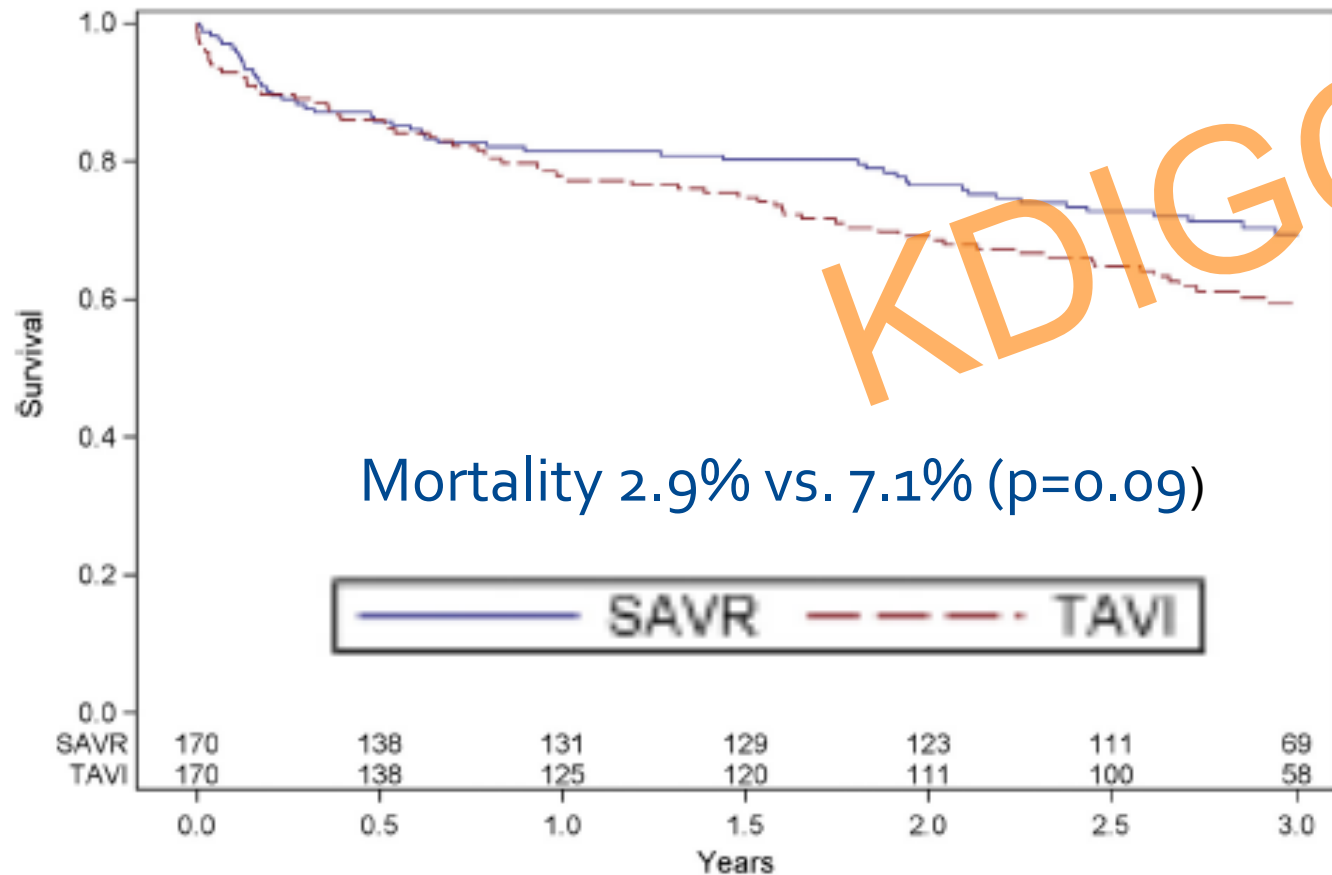
Variable	SAVR, n = 2485	TAVR, n = 2485	P Value
In-hospital mortality	12.9	6.2	<0.01
AKI	50.3	33	<0.01
Dialysis requirement	26.8	20.1	<0.01
Blood transfusion	49.7	38.2	<0.01
Vascular complications requiring surgery	3.4	4.4	0.07
PPM requirement	9.3	27.8	<0.01

TAVI/TAVR VERSUS SURGICAL REPLACEMENT

Transcatheter Aortic Valve Implantation Versus Surgical Aortic Valve Replacement for Severe Aortic Stenosis in Patients With Chronic Kidney Disease Stages 3b to 5



o, MS, Claudio Moretti, MD, Fabrizio D'Ascenzo, MD, Stefano Rosato, MS, ri, MD, Marco Barbanti, MD, Francesco Santini, MD, Marco Ranucci, MD, li, MD, Corrado Tamburino, MD, Francesco Onorati, MD, oro, MD, Claudio Grossi, MD, Danilo Fusco, MS, and ecchia, MS, on behalf of the OBSERVANT Research Group



- Propensity score matched patients (170)

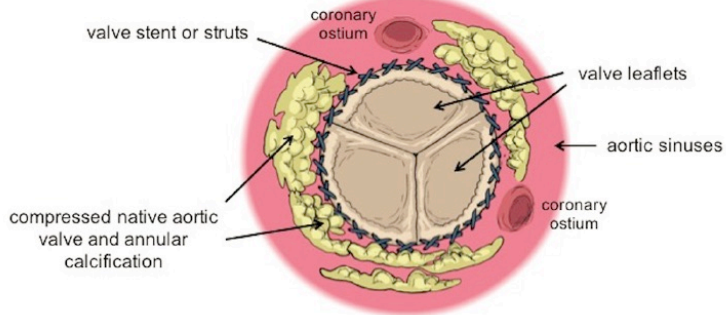


VALVE DURABILITY

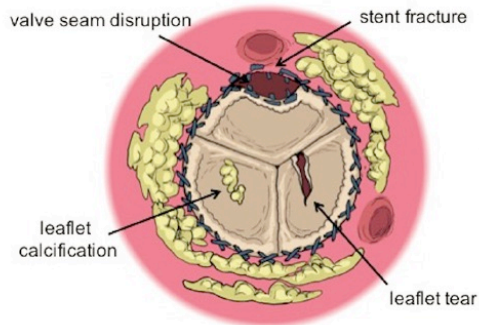
Importance of the valve durability-life expectancy ratio in selection of a prosthetic aortic valve

Rodrigo Bagur,^{1,2,3} Philippe Pibarot,⁴ Catherine M Otto⁵

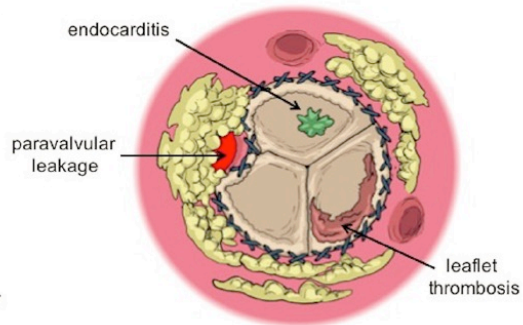
Normal Bioprosthetic Valve



Structural Valve Deterioration



Non-structural Valve Deterioration



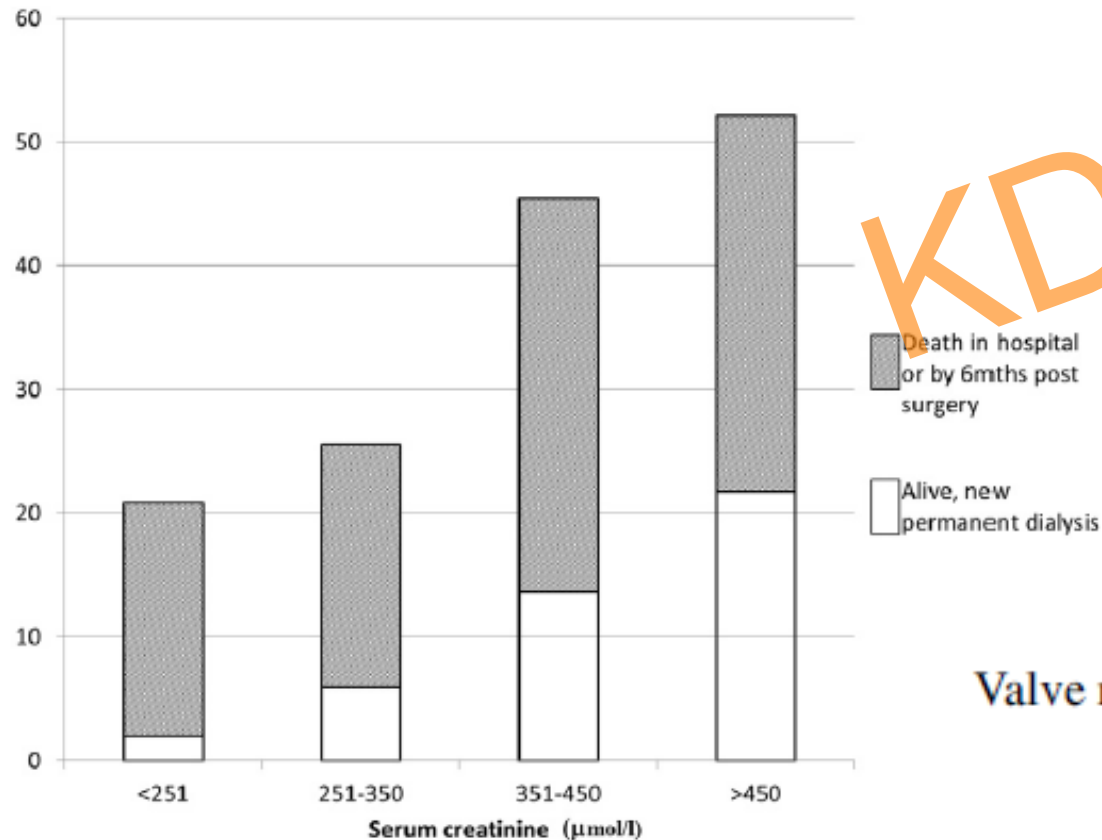
Ideally, durability of an aortic bioprosthetic valve should outlast longevity of the patient. A patient-centred approach is of paramount importance, always considering the 'valve durability to life expectancy ratio'.

VALVE REPLACEMENT IN CKD

- 545 patients

Outcomes of cardiac surgery in chronic kidney disease

Mangalee Fernando, FRACP,^{a,b} Hugh S. Paterson, FRACS,^c Karen Byth, PhD,^d
 Benjamin M. Robinson, MBBS, MPhil,^e Hugh Wolfenden, FRACS,^f David Gracey, PhD, FRACP,^{c,g} and
 David Harris, MD, BS, FRACP^{c,h}



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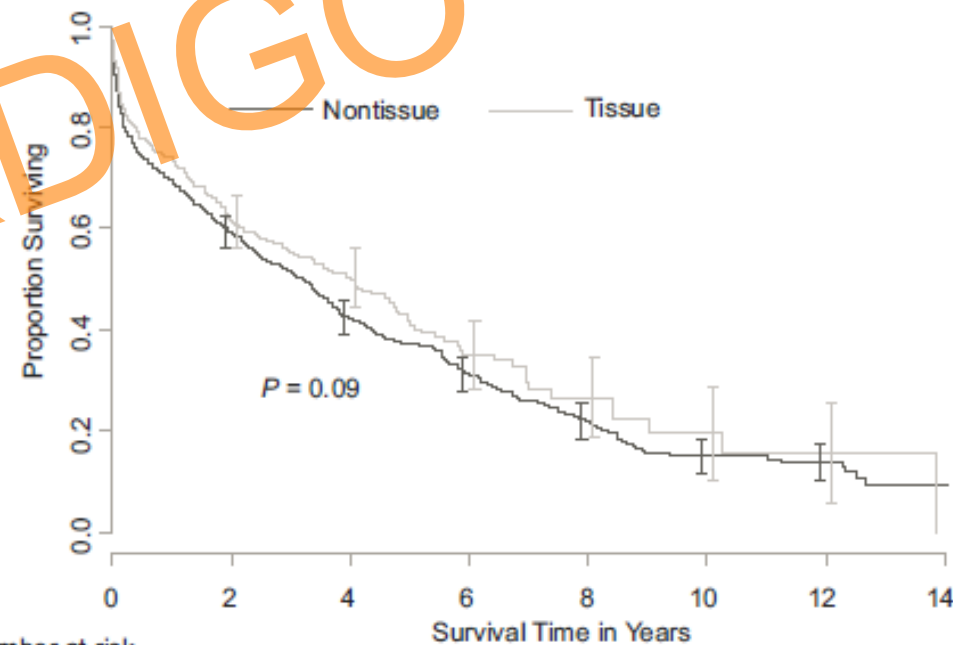
	1-y Survival		5-y Survival		10-y Survival	
	%	95% CI	%	95% CI	%	95% CI
Valve replacement surgery	72	66-79	54	46-62	38	30-48

VALVE SURGERY IN RENAL TRANSPLANT PATIENTS

- 1335 transplant patients
- 75% AVR
- 20% MV
- 5% combined
- In-hospital overall mortality 14%
- 2-year mortality 40%
- Tissue valves preferred

Valvular Heart Disease

Survival of Kidney Transplantation Patients in the United States After Cardiac Valve Replacement



Number at risk	0	2	4	6	8	10	12	14
Nontissue	966	495	275	158	77	32	16	
Tissue	369	168	89	38	14	6	4	

TAVI/TAVR IN RENAL TRANSPLANT PATIENTS

- 8 transplant patients

- All alive at 1 year

- Retrospective comparison to 18 patients sent for AVR, 1-year mortality 16.7%

Transcatheter aortic valve implantation improves outcome compared to open-heart surgery in kidney transplant recipients requiring aortic valve replacement

Henrik Fox (MD)^a, Stefan Büttner (MD)^b, Katrin Hemmann (MD)^a, Aida Asbe-Vollkopf (MD)^b, Mirko Doss (MD)^c, Andres Beiras-Fernandez (MD)^c, Anton Moritz (MD)^c, Andreas M. Zeiher (MD)^a, Ernst Scheuermann (MD)^d, Helmut Geiger (MD)^b, Stephan Fichtlscherer (MD)^a, Ingeborg A. Hauser (MD)^b, Ralf Lehmann (MD)^{a,*}

^a Department of Cardiology, Johann Wolfgang Goethe-University Frankfurt, Theodor-Stern-Kai 7, D-60590 Frankfurt, Germany

^b Department of Nephrology, Johann Wolfgang Goethe-University Frankfurt, Theodor-Stern-Kai 7, D-60590 Frankfurt, Germany

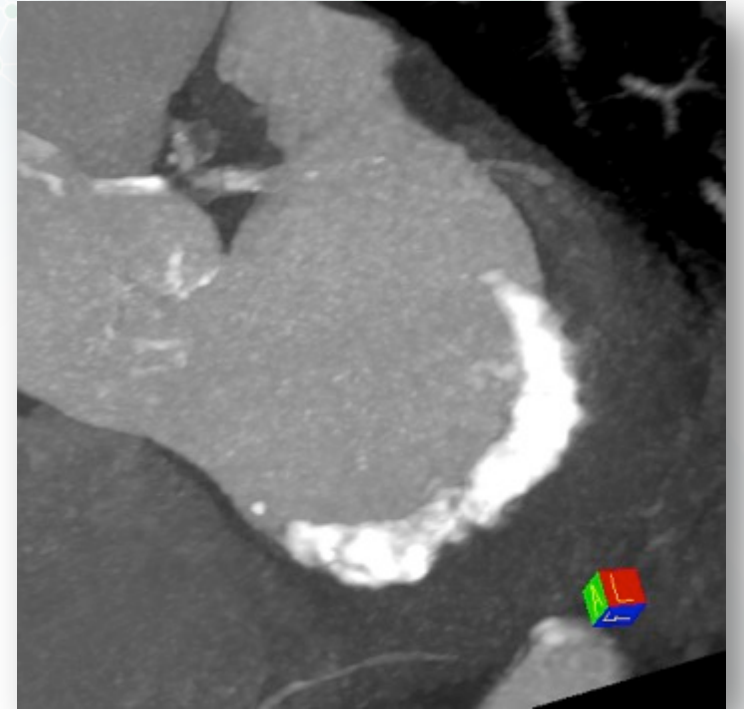
^c Department of Heart Surgery, Johann Wolfgang Goethe-University Frankfurt, Theodor-Stern-Kai 7, D-60590 Frankfurt, Germany

^d KfH Kuratorium für Dialyse und Nierentransplantation e.V. Schleusenweg 22, D-60590 Frankfurt, Germany

MITRAL VALVE SURGERY

- Due to anatomical considerations with excessive calcification, mitral valve repair often not possible
- Similar to AVR, CKD/ESRD affects outcome after surgery

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MITRAL VALVE SURGERY

- Due to anatomical considerations with often not possible

Mitral procedure selection in patients on dialysis: Does mitral repair influence outcomes?

Christina M. Vassileva, MD,^a J. Matthew Brennan, MD, MPH,^b James S. Gammie, MD,^c Shubin Sheng, MS,^d Theresa Boley, MSN,^a Paramita Saha-Chaudhuri, PhD,^e and Stephen Hazelrigg, MD^a

Variable*	Overall (n = 86,563)	No dialysis (n = 85,083)	Dialysis (n = 1480)	P value†
Median ventilation time (h) (IQR)‡	7.5 (4.6-14.9)	7.4 (4.6-14.5)	17.1 (7.6-38.5)	<.0001
• Repair attempted less frequently				.01
• Repair success equally likely				.68
• Repair vs. Replacement did not affect short term outcome				.53
Surgical mortality (%)	2.4	2.3	9.3	.01
Composite morbidity and mortality (%)	16.3	15.9	40.9	.01

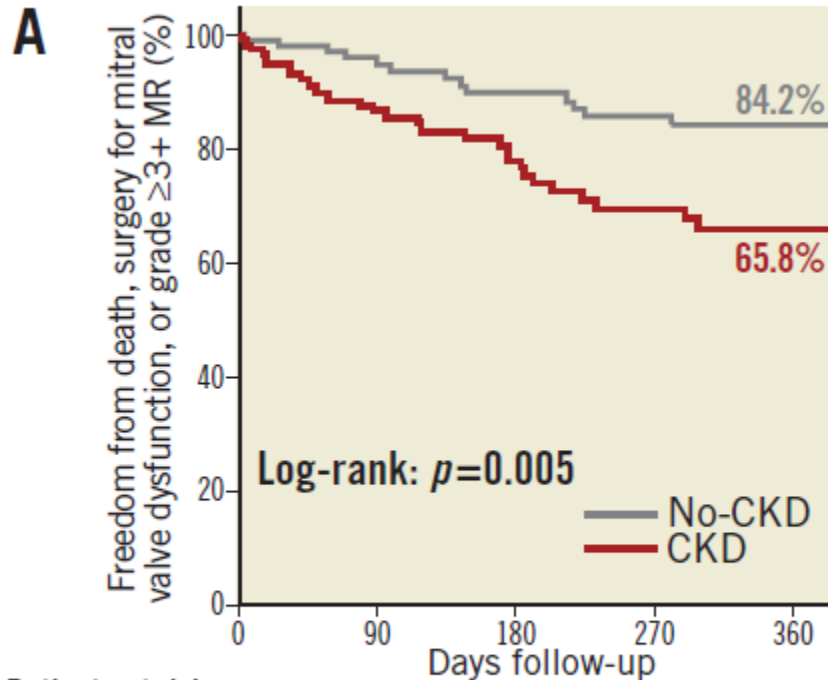
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PERCUTANEOUS TREATMENT OF MR IN CKD/ESRD

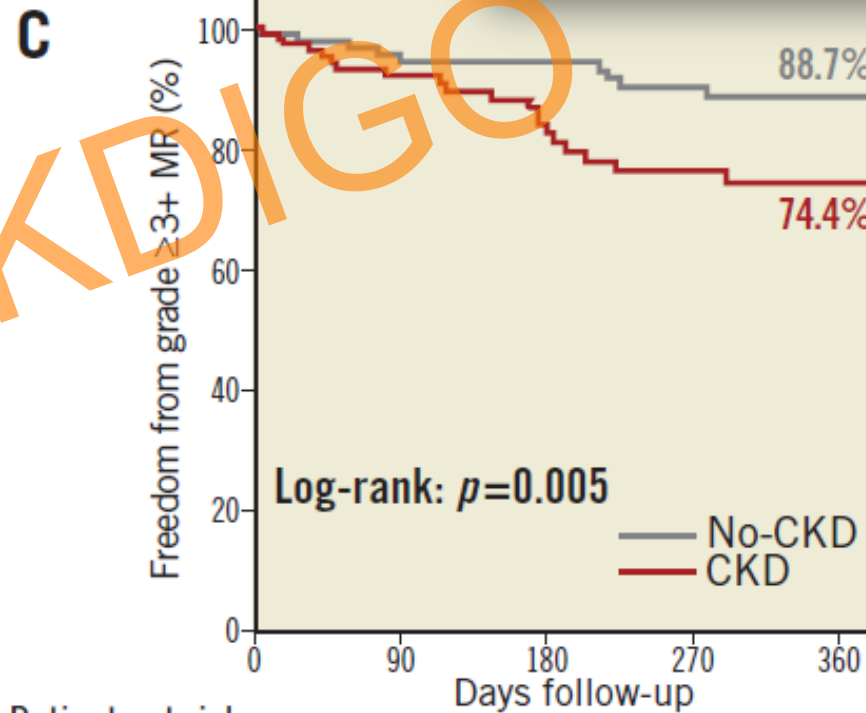
Impact of chronic kidney disease on outcomes after percutaneous mitral valve repair with the MitraClip system: insights from the GRASP registry



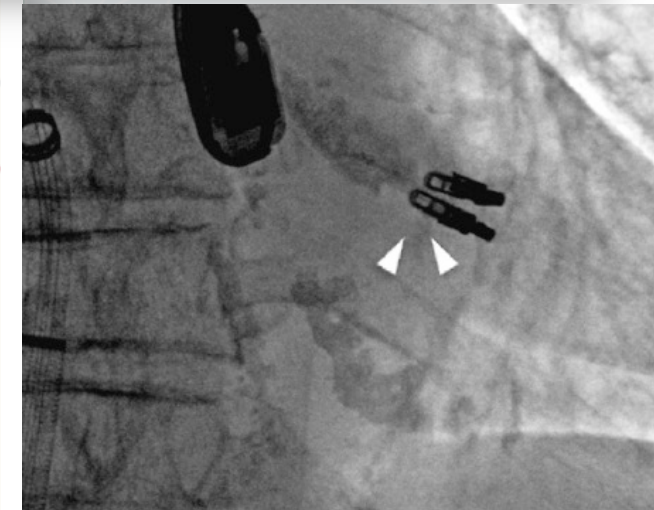
Yohei Ohno^{1,2}, MD; Guilherme F. Attizzani^{1,3}, MD; Davide Capodanno^{1,4}, MD, PhD; Marco Barbanti¹, MD; Stefano Cannata¹, MD; Fabio Dipasqua¹, MD; Sebastiano Immè¹, MD; Margherita Ministeri¹, MD; Anna Caggegi¹, MD; Anna M. Pistrutto¹, MD; Marta Chiarandà¹, MD; Giuseppe Ronsivalle¹, MD; Sandra Giaquinta¹, MD; Sarah Mangiafico¹, MD; Salvatore Scandura¹, MD; Piera Capranzano^{1,4}, MD, PhD; Corrado Tamburino^{1,4}, MD, PhD; Carmelo Grasso^{1*}, MD



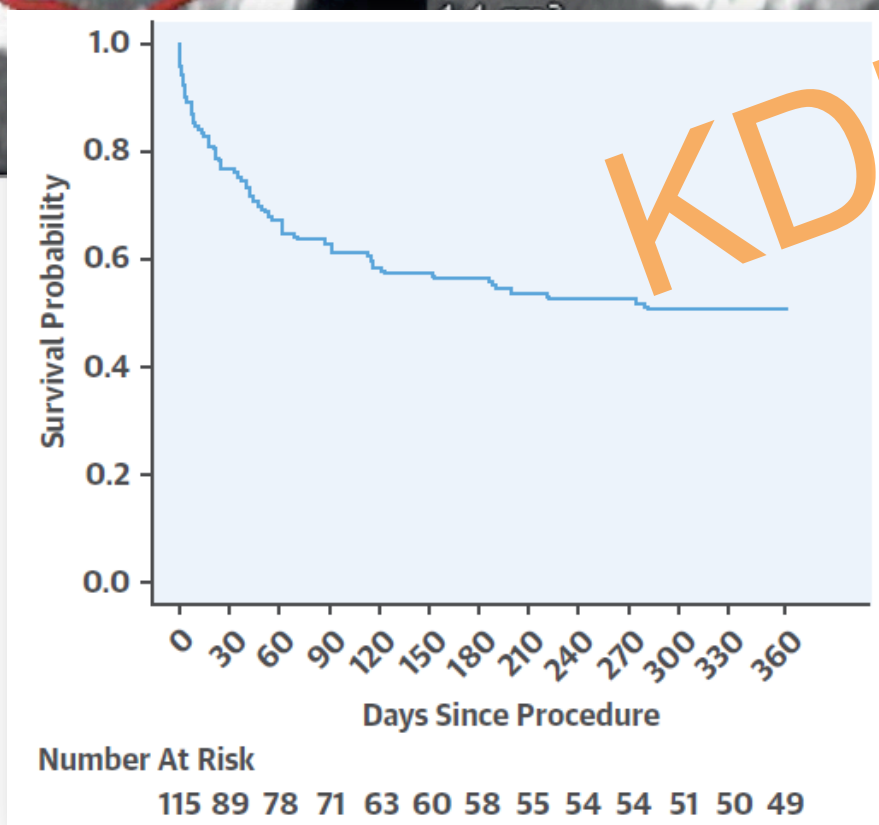
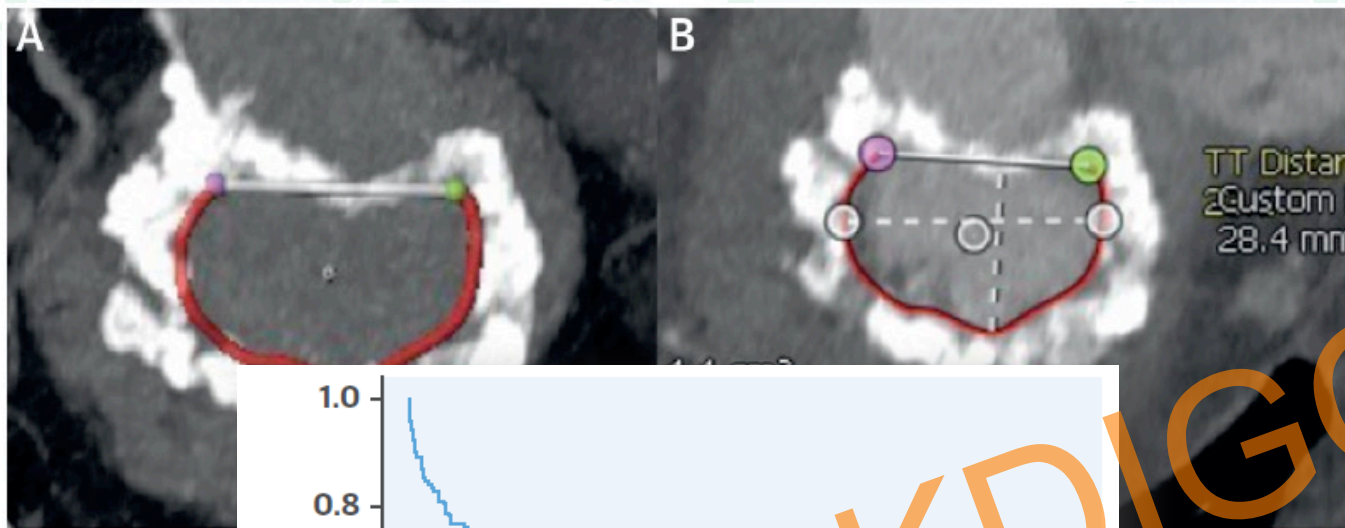
Patients at risk		0	90	180	270	360
No-CKD	101	81	68	60	56	
CKD	112	78	59	42	37	



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No-CKD	101	79	68	60	56	
CKD	113	78	59	42	36	



PERCUTANEOUS TREATMENT OF MR IN CKD/ESRD



1-Year Outcomes of Transcatheter Mitral Valve Replacement in Patients With Severe Mitral Annular Calcification

Mayra Guerrero, MD,^{a,*} Marina Urena, MD,^{b,*} Dominique Himbert, MD,^b Dee Dee Wang, MD,^c Mackram Eleid, MD,^d Susheel Kodali, MD,^e Isaac George, MD,^f Tarun Chakravarty, MD,^g Moses Mathur, MD,^h David Holzhey, MD, PhD,ⁱ Ashish Pershad, MD,^j H. Kenith Fang, MD,^k Daniel O'Hair, MD,^l Noah Jones, MD,^m Vaikom S. Mahadevan, MBBS, MD,ⁿ Nicolas Dumonteil, MD,^o Josep Rodés-Cabau, MD,^p Nicolo Piazza, MD,^q Enrico Ferrari, MD,^r Daniel Ciaburri, MD,^s Mohammed Nejjari, MD,^t Augustin DeLago, MD,^u Paul Sorajja, MD,^v Firas Zahr, MD,^w Vivek Rajagopal, MD,^x Brian Whisenant, MD,^y Pinak Bipin Shah, MD,^z Jan-Malte Sinning, MD,^{aa} Adam Witkowski, MD,^{bb} Helene Eltchaninoff, MD,^{cc} Danny Dvir, MD,^{dd} Bena Martin, MD,^{ee} Guilherme F. Attizzani, MD,^{ff} Diego Gaia, MD,^{gg} Nagela S.V. Nunes, MD,^{hh} Amir-Ali Fassa, MD,ⁱⁱ Faraz Kerendi, MD,^{jj} Gregory Pavlides, MD,^{kk} Vijay Iyer, MD,^{ll} Georges Kaddissi, MD,^{mm} Christian Witzke, MD,ⁿⁿ James Wudel, MD,^{oo} Gregory Mishkel, MD,^{pp} Bryan Raybuck, MD,^{qq} Chi Wang, PhD,^{rr} Ron Waksman, MD,^{ss} Igor Palacios, MD,^{tt} Alain Cribier, MD,^{cc} John Webb, MD,^{dd} Vinnie Bapat, MD,^f Mark Reisman, MD,^h Raj Makkar, MD,^g Martin Leon, MD,^e Charanjit Rihal, MD,^d Alec Vahanian, MD,^b William O'Neill, MD,^c Ted Feldman, MD^a

- 30 day mortality 25%
- 1 year mortality 53%

CHOICE OF VALVE IN ESRD PATIENTS

- 5523 mechanical valves
- 1600 tissue valves

DOI 10.1111/jocs.12805

ORIGINAL ARTICLE

WILEY **JOURNAL OF**
Cardiac Surgery

Tissue valves are preferable for patients with end-stage renal disease: an aggregate meta-analysis

Salah E. Altarabsheh, M.D.¹ | Salil V. Deo, M.S., M.Ch.^{2*} |
Shannon M. Dunlay, M.S., M.D.³ | Yaqthan M. Obeidat, M.D.⁴ |
Patricia J. Erwin, M.D.⁵ | Abeer Rababa'h, Ph.D.⁶ |
Nagaraju Sarabhu, M.D., M.P.H.⁷ | Suparna Navale, M.S., M.P.H.⁸ |
Yang Hyun Cho, M.D.⁹ | Harveen K. Lamba, M.D.¹⁰ | Alan H. Markowitz, M.D.² |
Soon J. Park, M.D.²

Studied end-point	Studies (N)	Crude incidence		OR, 95% CI	p-Value
		MeV (%)	TiV (%)		
Early mortality	10	13.9	15.2	1.15 [0.77; 1.72]	0.49
Bleeding event	11	19.6	6.9	2.55 [1.53; 4.26]	<0.01
Re-operation	6	0.12	1.71	0.32 [0.11; 0.91]	0.03

Structural valve degeneration was present in only 0.6% patients after a tissue valve replacement. Overall survival after valve replacement was poor (median 2.61 years); valve choice did not influence this outcome (pooled HR 0.87 [0.73; 1.04]; p = 0.14).

VALVE COMPLICATIONS

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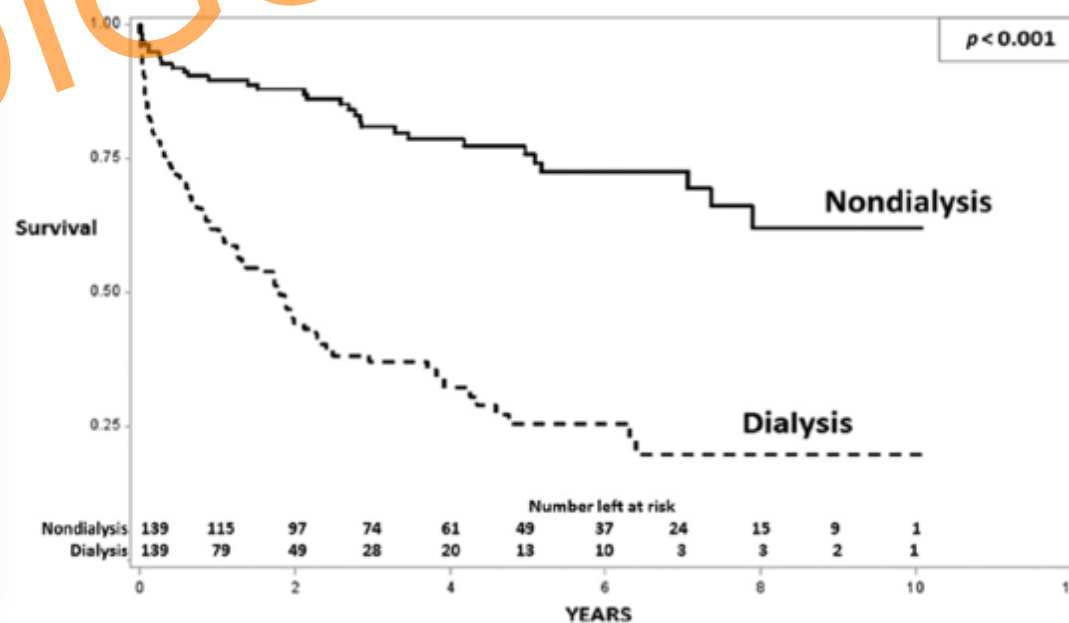
PROSTHETIC VALVE ENDOCARDITIS

High Risk of Prosthetic Valve Endocarditis and Death After Valve Replacement Operations in Dialysis Patients

Danielle K. Farrington, MD, Patrick D. Kilgo, MS, Vinod H. Thourani, MD, Jesse T. Jacob, MD,* and James P. Steinberg, MD*

Department of Biostatistics and Bioinformatics, Emory University Rollins School of Public Health, Atlanta; Division of Cardiothoracic Surgery, Department of Surgery, and Division of Infectious Diseases, Department of Medicine, Emory University School of Medicine, Atlanta, Georgia

Outcome	Control Patients n = 139 (%)	Dialysis Patients n = 139 (%)	p Value
PVE	8 (5.8)	26 (18.7)	0.001
Definite	4 (2.9)	11 (7.9)	
Possible	4 (2.9)	15 (10.8)	
In-hospital mortality	6 (4.3)	25 (18.0)	<0.001
30-day mortality	6 (4.3)	23 (16.6)	0.004
Overall mortality	32 (23.0)	89 (64.0)	<0.001



PROSTHETIC VALVE ENDOCARDITIS

- 38 fold increased risk of IE compared to age and gender matched population
- Increased risk among patients with no AV fistula

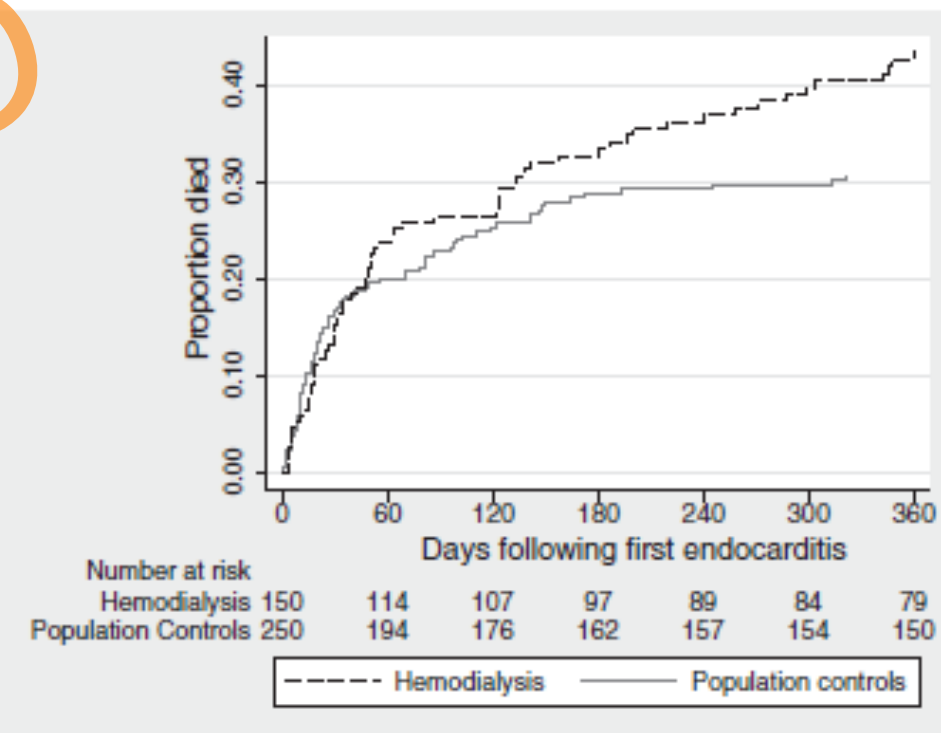
Infective endocarditis in patients receiving chronic hemodialysis: A 21-year observational cohort study in Denmark



Lene Ugilt Pagter Ludvigsen, MD,^{a,d} Lars Skov Dalgaard, MD,^b Henrik Wiggers, MD, PhD, DMSc,^c Søren Jensen-Fangel, MD, DMSc,^b Bente Jespersen, MD, DMSc,^d Svend Ellermann-Eriksen, MD, PhD, DMSc,^a Lars Østergaard, MD, PhD, DMSc,^b and Ole Schmelz Søgaard, MD, PhD^b *Aarhus, Denmark*

KDIGO

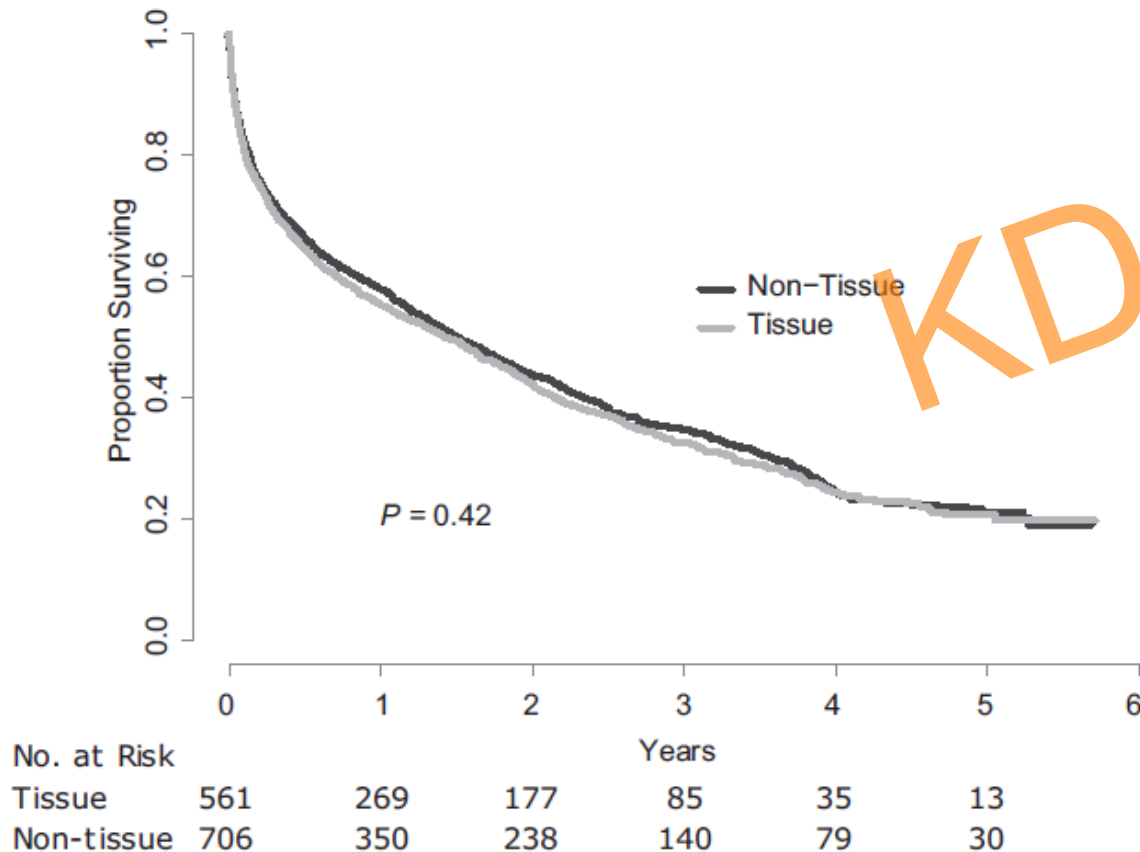
Group	No.	Time at risk (person-years)	Cr (95% CI)
Patients undergoing hemodialysis	150	21,975	6.83 (4.11-11.2)
Population controls	250	1,397,042	0.18 (0.15-0.22)



PROSTHETIC VALVE ENDOCARDITIS

Long-term Survival of Dialysis Patients With Bacterial Endocarditis Undergoing Valvular Replacement Surgery in the United States

Maxwell D. Leither, MD; Gautam R. Shroff, MBBS; Shu Ding, MS;
David T. Gilbertson, PhD; Charles A. Herzog, MD



- Predominantly Staphylococcus Endocarditis
- Mortality Predictors:
 - Age
 - DM as a cause of ESRD
 - Surgery during index hospitalization
 - Staph
 - Dysrhythmia

ORAL ANTICOAGULATION IN VALVULAR DISEASE

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ORAL ANTICOAGULATION IN VALVULAR DISEASE

- CKD patients are more prone for AF, OAK for mechanical valves
- More prone for bleeding
- More options for OAC (apart from mechanical Valves)

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ORAL ANTICOAGULATION IN VALVULAR DISEASE

- Patients on RRT: no data for new OAC , VKA
- Generally, DOAC are not recommended below GFR 30 ml/min/
- Use of DOAC in AF patients with moderately reduced GFR has been shown in subgroups from RCTS to be safe and associated with less bleeding compared to VKA
- Patients with CKD on VKA show less 'Time in Therapeutic Range`

ORAL ANTICOAGULATION IN VALVULAR DISEASE

- Patients on R

Non-vitamin K antagonist oral anticoagulants in atrial fibrillation patients with chronic kidney disease: A systematic review and network meta-analysis



- Generally, DC

Giuseppe Andò^a, Piera Capranzano^{b,*}

^a Department of Clinical and Experimental Medicine, University of Messina, Messina, Italy

^b Cardiovascular Department, Ferrarotto Hospital, University of Catania, Catania, Italy

Conclusions: Indirect comparisons generated the hypothesis that Apixaban and Edoxaban High-Dose might be more likely associated with a better net clinical profile in AF patients with moderate CKD. These findings may potentially guide physicians in selecting the most appropriate NOAC for each patient, while waiting for dedicated evidences.

CONCLUSIONS I

- Valvular disease in CKD/ESRD is common predominantly caused by excessive calcification
- Left-sided valvular disease (AS, MR) is significantly higher in CKD compared to non-CKD population and is associated with higher mortality
- For both surgical and interventional treatment, CKD patients show worse outcome compared to non-CKD populations
- TAVI/TAVR in the context of AS in CKD seems to be associated with better outcome compared to surgery (Mortality, AKI, Hospital Stay)

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CONCLUSIONS II

- Surgical valvular replacement with tissue valves and mechanical valves show comparable outcome with less bleeding for tissue valves
- Prosthetic valve endocarditis risk is higher in ESRD, high surgical mortality
- Interventional treatment of mitral valve disease is still in the early era even von non-CKD cohorts
- Data for right sided disease are scarce

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The background features a light blue silhouette of a hand with fingers spread. Overlaid on this is a network of small green circles connected by thin white lines, resembling a molecular or data network. The text 'KDIGO' is centered over the hand in a bold, orange, sans-serif font.

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THANK YOU

