



Interventioneller Klappenersatz: Welche Methode für welchen Patienten?



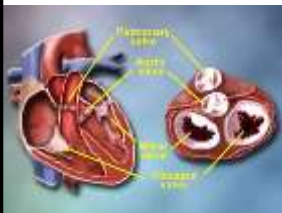
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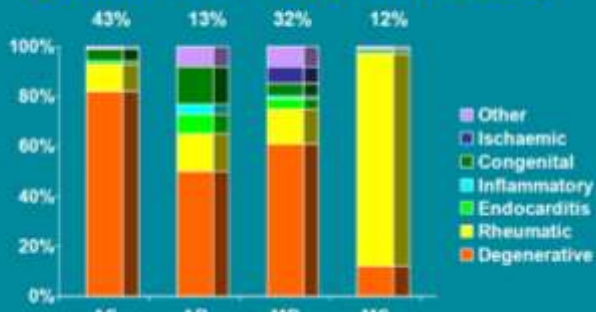
Klinik III für Innere Medizin der Universität zu Köln

Die Klappen des menschlichen Herzens und ihre Vitien



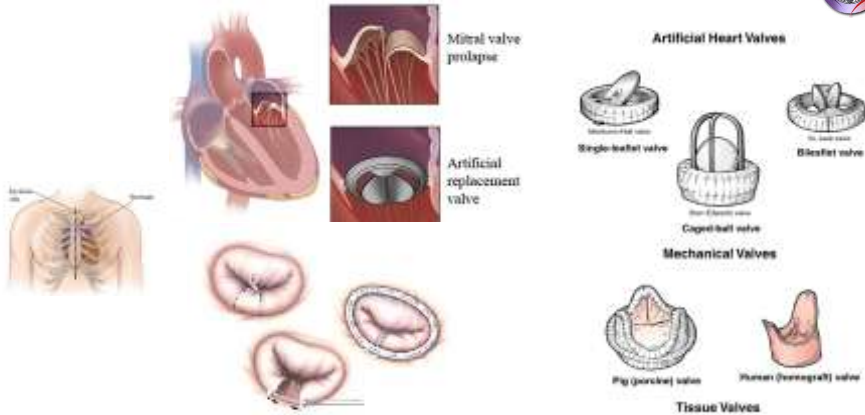
„Die Richtung muss stimmen und die Hindernisse auf dem Weg dürfen nicht zu groß werden.“

Aetiologies of Single Valvular Heart Diseases in the Euro Heart Survey



(Singh et al. Eur Heart J 2005;24:1244-53)

Die Chirurgie als Standardverfahren



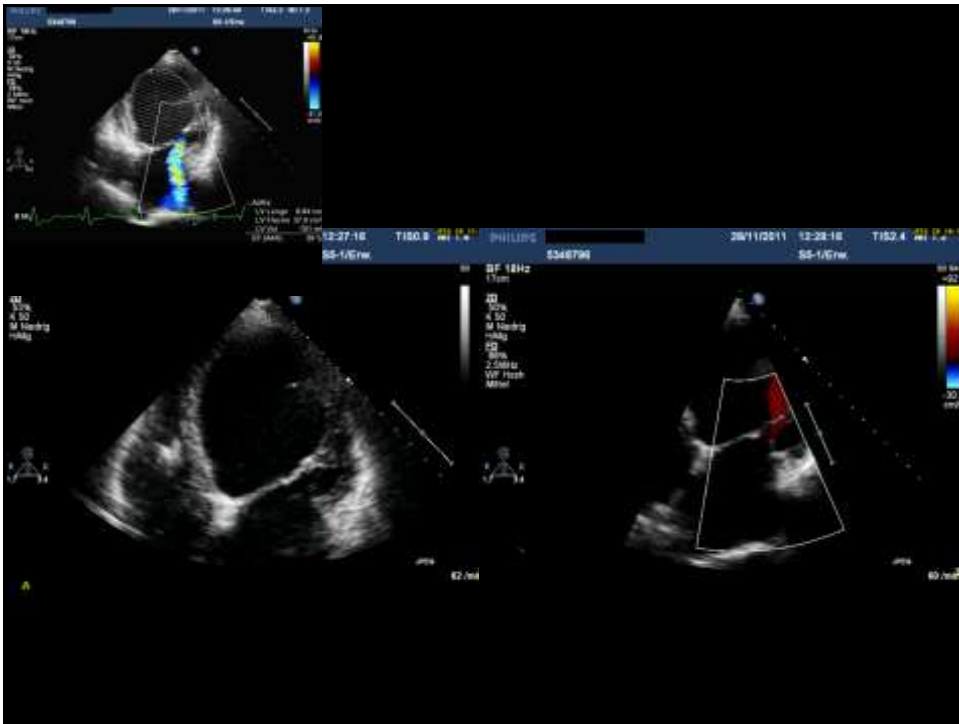
Der chirurgische Klappenersatz ist das bevorzugte Verfahren, der keinem Patienten in gutem AZ mit moderatem OP- Risiko vorenthalten werden sollte!

Der schwierige Patient




Frau W.R., geb. 1937

- Myokarditis 1998
- DCM mit Herzinsuffizienz °II-III (LVEF<30%)
- Z.n. ICD- Implantation 2006
- Z.n. VT mit Schockabgabe am 1.3.2011 und am 14.11.2011
- Optimale medikamentöse Therapie, kein LSB
- Leistungsfähigkeit abnehmend



UNIKLINIK
KÖLN

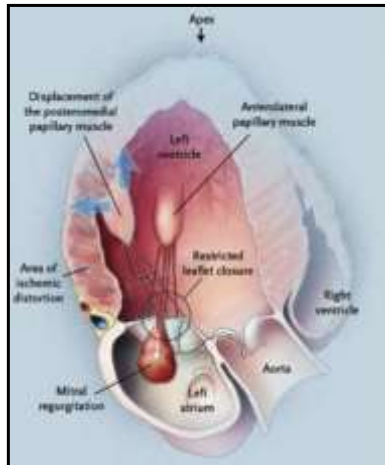
Diagnose und Therapie



- Hochgradige funktionelle MK-Insuffizienz bei hochgradig eingeschränkter LV-Funktion.
- Herz- Konferenz: OP möglich mit 10-15% Sterblichkeit.
- Gibt es andere Möglichkeiten?

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Funktionelle Mitralinsuffizienz – was tun?



NEJM 2004;351:16:1681-1684.

- DCM zuerst, dann MI
- Ist die Mitralinsuffizienz hämodynamisch günstig „als Überlaufventil“/ Druckentlastung des LV?
- Heart dilation → annulus dilation → FMR.¹
- Dramatic reduction in cardiac output.¹
- Exacerbates heart failure symptoms.¹
- Associated with higher mortality.^{1,2}
- Associated with more heart failure hospitalizations and cost.³
- Lack of therapeutic options.⁴

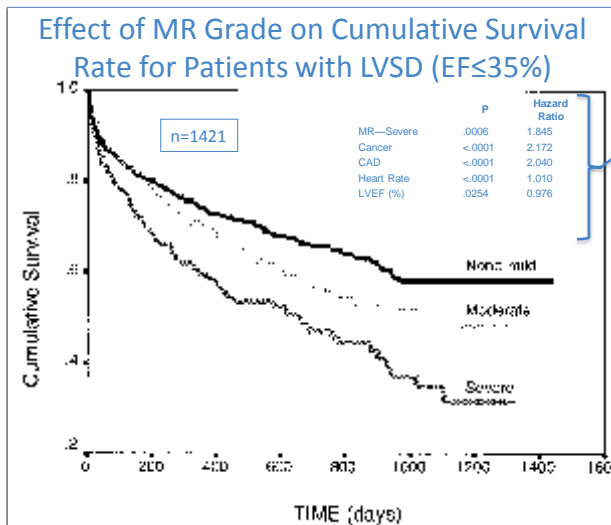
¹Koelling TM, Aaronson KD, Cody RJ, et al. American Heart Journal, 2002;144:3.

²Trichon BH, Felker GM, Shaw LK, et al. Am J Cardiol 2003;91:538-43.

³Baskett RJF, Exner DV, Hirsch GM, et al. Can J Cardiol 2007;23:10:797-800.

⁴Carabello BA. JACC, 2008; 52:5:319-26.

Sterblichkeit von Patienten mit funktioneller Mitralinsuffizienz nach Schweregrad



Was sagen die Leitlinien?

ESC GUIDELINES

ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2008²

The Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2008 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association of the ESC (HFHA) and endorsed by the European Society of Intensive Care Medicine (ESICM)

Functional mitral regurgitation Surgery

- may be considered in selected patients with severe functional MR and severely depressed LV function, who remain symptomatic despite optimal medical therapy.

Class of recommendation IIb, level of evidence C

ESC Guidelines Heart Failure, Eur Heart J 2008

Class IIb Usefulness/efficacy is less well established by evidence/opinion.

ESC GUIDELINES

Guidelines on the management of valvular heart disease

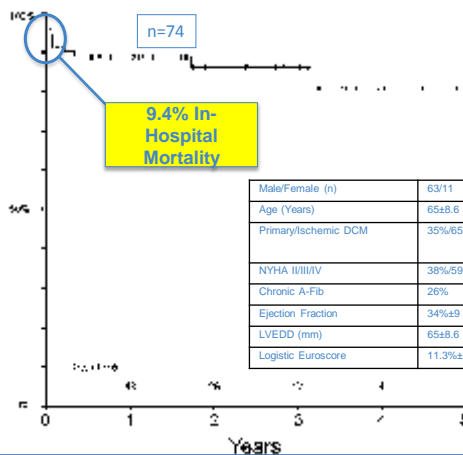
The Task Force on the Management of Valvular Heart Disease of the European Society of Cardiology

Surgical treatment of MR in these patients was previously avoided owing to concerns about the high operative risk and the potential deleterious effect of increasing after-load. Opinions have changed as a result of case series from highly experienced centres reporting good results.^{120,121,126,127} Depending on the degree of urgency, operative mortality has been reported between 5 and 18%. In patients with EF < 30%, a 2 year survival rate of 70% and a 5 year survival rate of 61% have been reported with good functional results.^{120,121} These data suggest

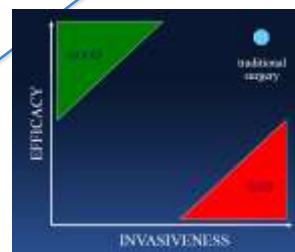
ESC Guidelines Valvular Heart Disease, Eur Heart J 2007

OP bei Patienten mit funktioneller Mitralklappeninsuffizienz.

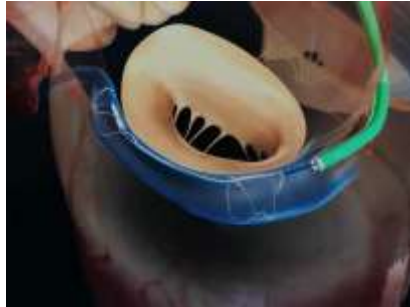
Survival with Surgical Treatment of FMR in Advanced Dilated Cardiomyopathy



Baseline Clinical Data



Neues Verfahren: Perkutane Mitralklappenring- Anuloplastie Carillion- Device



Implantation des Devices



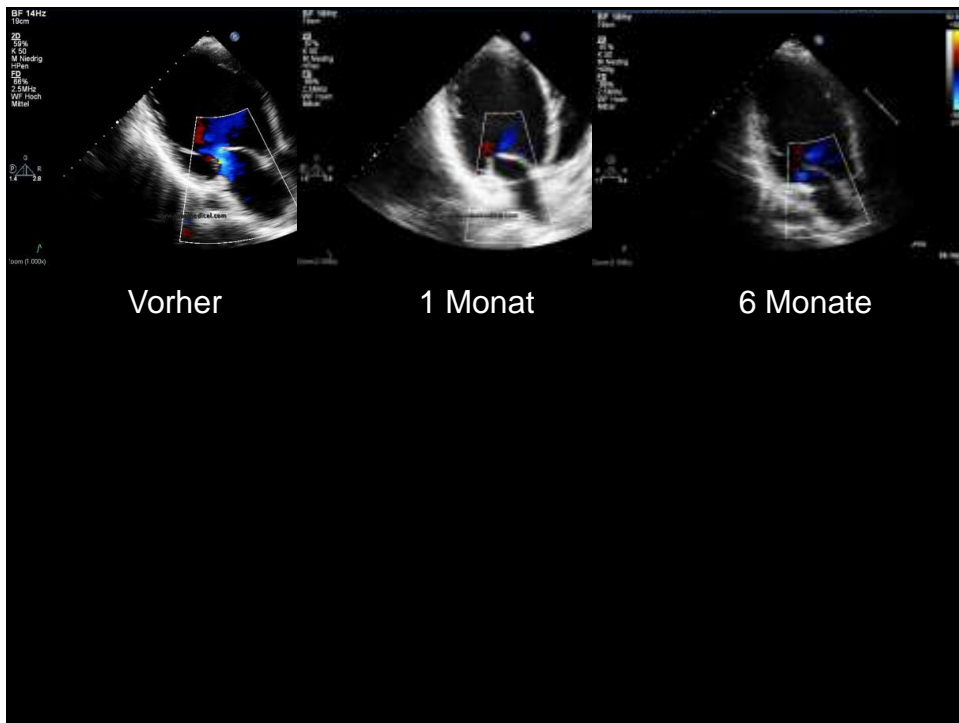
Venogram



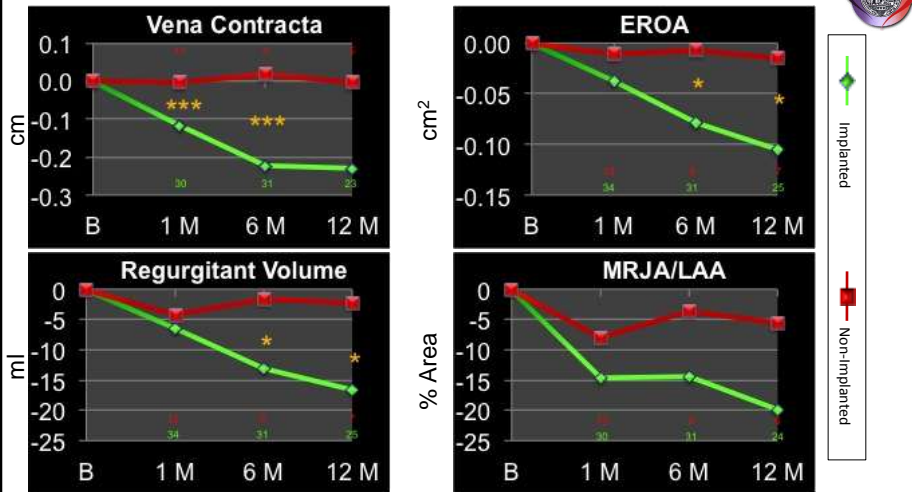
Distal Anchor
Pre-Tension



Tissue Plication

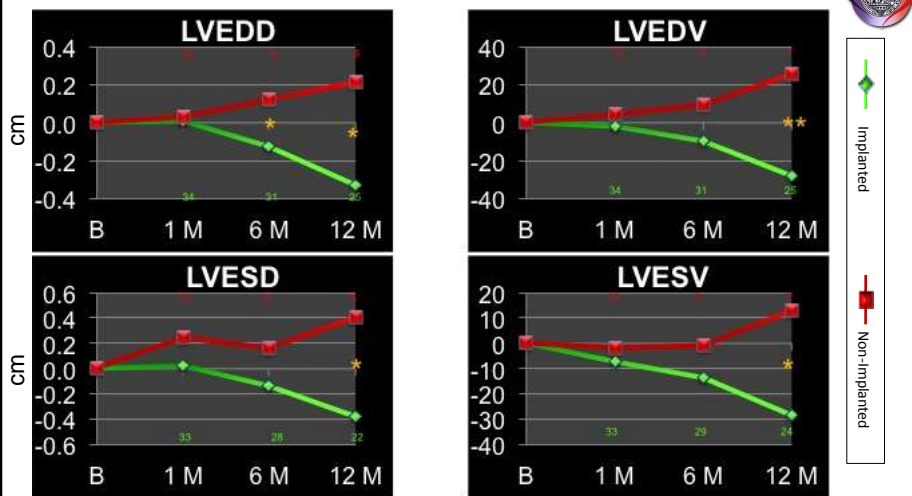


TITAN- Studie: Reduktion der Mitralinsuffizienz



*p<0.05, **p<0.01, ***p<0.001
Between groups comparison of paired absolute differences from baseline
Hoppe UC, Siminiak T, Haude M, et al., European Heart J 2010;31:160-1.

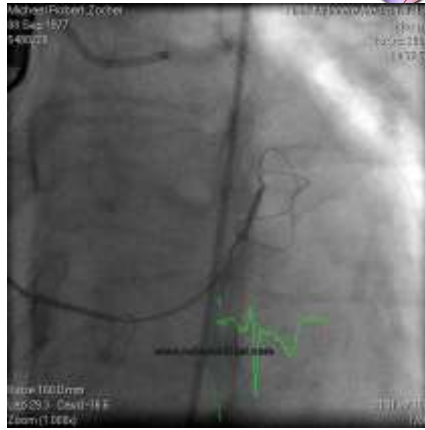
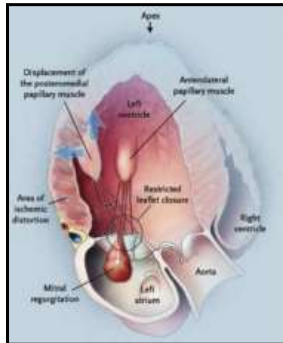
TITAN Studie: Reverse Remodeling



*p<0.05, **p<0.01, ***p<0.001
Between groups comparison of paired absolute differences from baseline
Hoppe UC, Siminiak T, Haude M, et al., European Heart J 2010;31:160-1.

Welche Patienten?

Strukturell intakte MK:
Funktionelle MK-Insuffizienz.
Keine Ringverkalkung.
Cave: Ramus Circumflexus!



Andere Verfahren: MitraClip

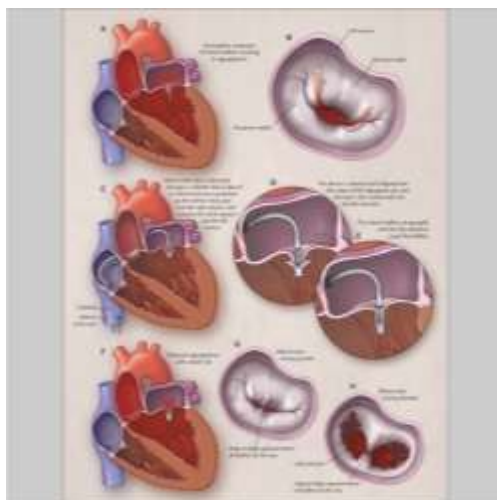
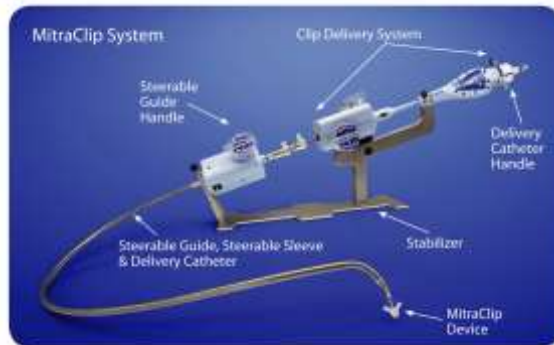


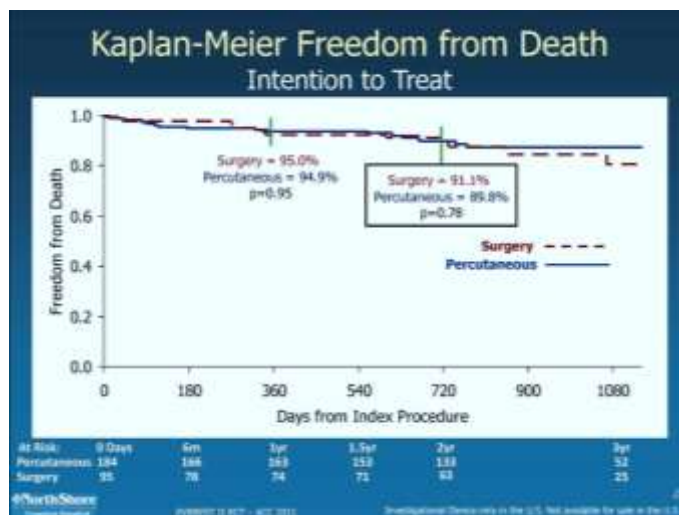
Figure 1. Percutaneous Repair of a Mitral Valve.
In patients with mitral regurgitation resulting from incomplete leaflet coaptation (Panels A and B), percutaneous mitral valve repair is performed by means of femoral venous and transseptal access to the left atrium to steer the device toward the origin of the regurgitant jet (Panel C). A mitral clip is passed through the mitral orifice from the left atrium to the left ventricle and pulled back to grasp the leaflet edges (Panels D and E). If reduction of the mitral regurgitation is satisfactory, the device is locked and then released (Panel F). A double orifice is created in conjunction with reduction in mitral regurgitation (Panels G and H).

Das MitraClip System



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Mitralklappen- Clipping (Everest II)

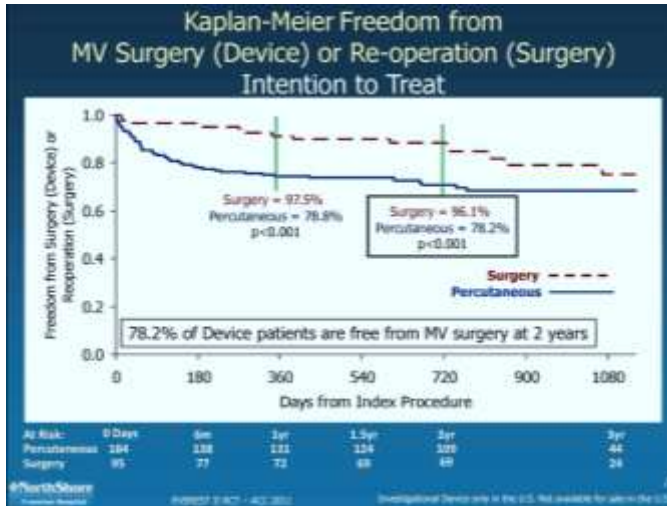


n= 279
MI 3+ oder 4+
2:1 Randomisierung

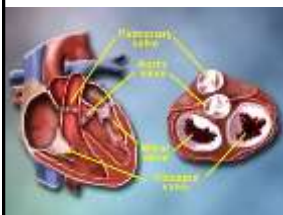
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Feldman et al., NEJM 2011

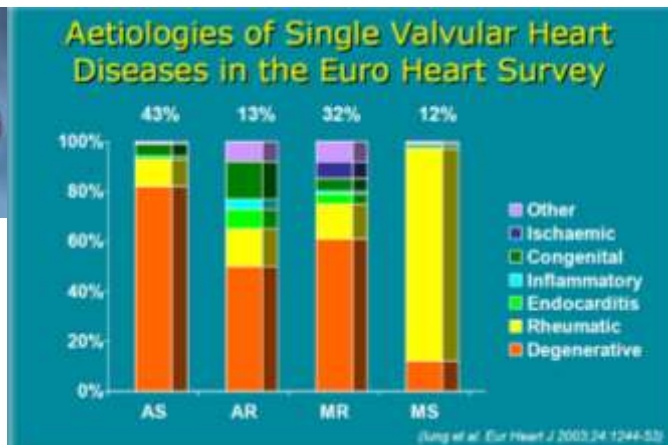
Mitralklappen- Clipping (Everest II)



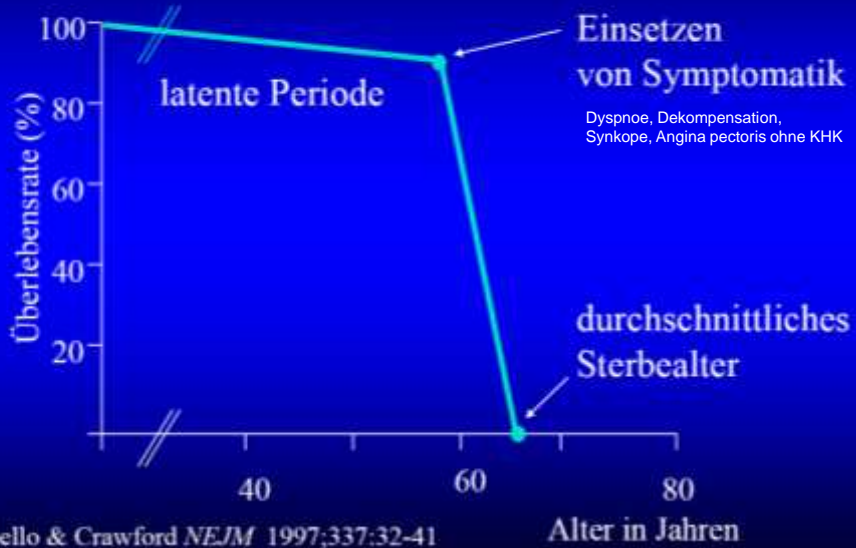
Die Klappen des menschlichen Herzens und ihre Vitien



„Die Richtung muss stimmen und die Hindernisse auf dem Weg dürfen nicht zu groß werden.“



NATÜRLICHER VERLAUF DER AS



TAVI – transcatheter aortic valve implantation

Sapien XT



SAPIEN XT
• 20, 23, 26, 29 mm

CoreValve
• 26, 29, 31 mm

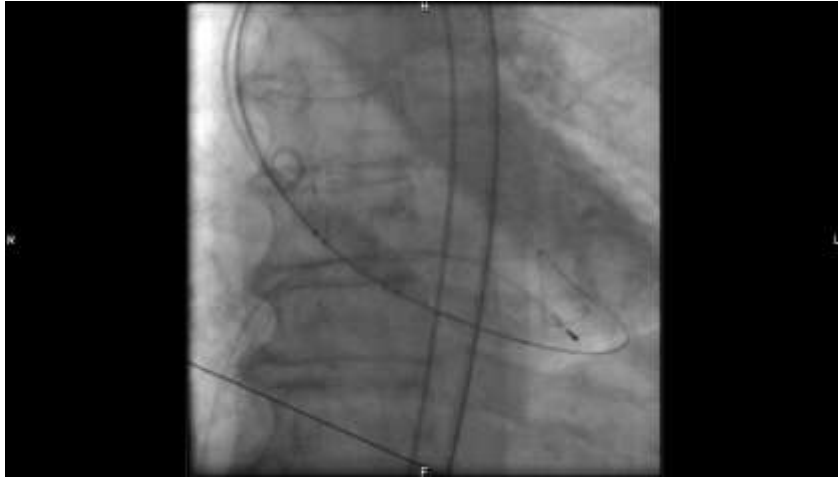
Newer valves will offer a full range of sizes



CoreValve

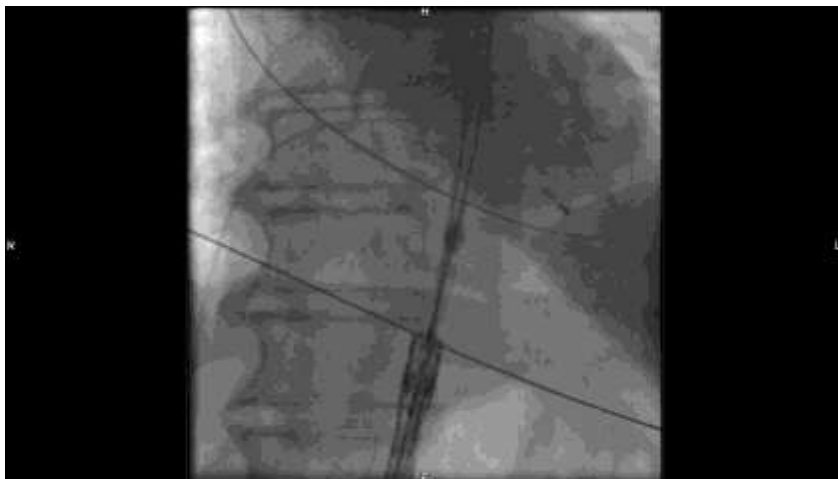


Klinische Innovationen – TAVI (transcatheter aortic valve implantation)



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Klinische Innovationen – TAVI (transcatheter aortic valve implantation)



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Klinische Innovationen – TAVI (transcatheter aortic valve implantation)



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Klinische Innovationen – TAVI (transcatheter aortic valve implantation)



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Klinische Innovationen – TAVI (transcatheter aortic valve implantation)



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Klinische Innovationen – TAVI (transcatheter aortic valve implantation)



Seite 30 14.1.2012 | Was ist neu in der Kardiologie? - Interventioneller Klappenersatz

Die PARTNER Studie PARTNER Cohort B Publication – Oct. 2010



Transcatheter Aortic-Valve Implantation for Aortic Stenosis in Patients Who Cannot Undergo Surgery

OBJECTIVE
To compare transcatheter aortic-valve implantation with surgical aortic-valve replacement in patients who cannot undergo surgery.

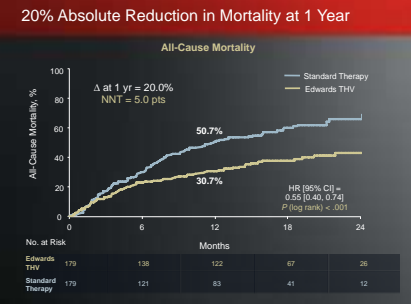
DESIGN
Randomized controlled trial.

SETTING
Two tertiary care hospitals.

PARTICIPANTS
101 patients with aortic stenosis who were not candidates for surgical aortic-valve replacement.

INTERVENTIONS
Transcatheter aortic-valve implantation or surgical aortic-valve replacement.

MEASUREMENTS AND MAIN RESULTS
At 1 year, the rate of all-cause mortality was 50.7% in the transcatheter group and 60.7% in the surgical group. The rate of mortality from aortic stenosis was 20.0% in the transcatheter group and 30.7% in the surgical group. The rate of mortality from aortic stenosis was 20.0% in the transcatheter group and 30.7% in the surgical group. The rate of mortality from aortic stenosis was 20.0% in the transcatheter group and 30.7% in the surgical group.



“On the basis of a rate of death from any cause at 1 year that was 20 percentage points lower with TAVI than with standard therapy, balloon-expand-able TAVI should be the new standard of care for patients with aortic stenosis who are not suitable candidates for surgery” *M. B. Leon*

The PARTNER Studie PARTNER Cohort A Publication – Jun. 2011



Transcatheter versus Surgical Aortic-Valve Replacement in High-Risk Patients

OBJECTIVE
To compare transcatheter aortic-valve replacement with surgical aortic-valve replacement in high-risk patients.

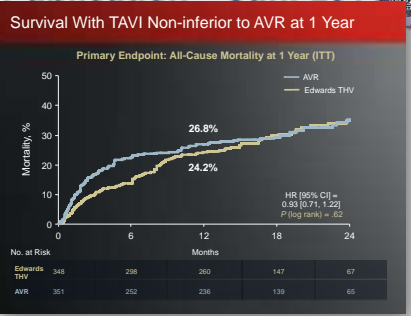
DESIGN
Randomized controlled trial.

SETTING
Two tertiary care hospitals.

PARTICIPANTS
699 high-risk patients with aortic stenosis.

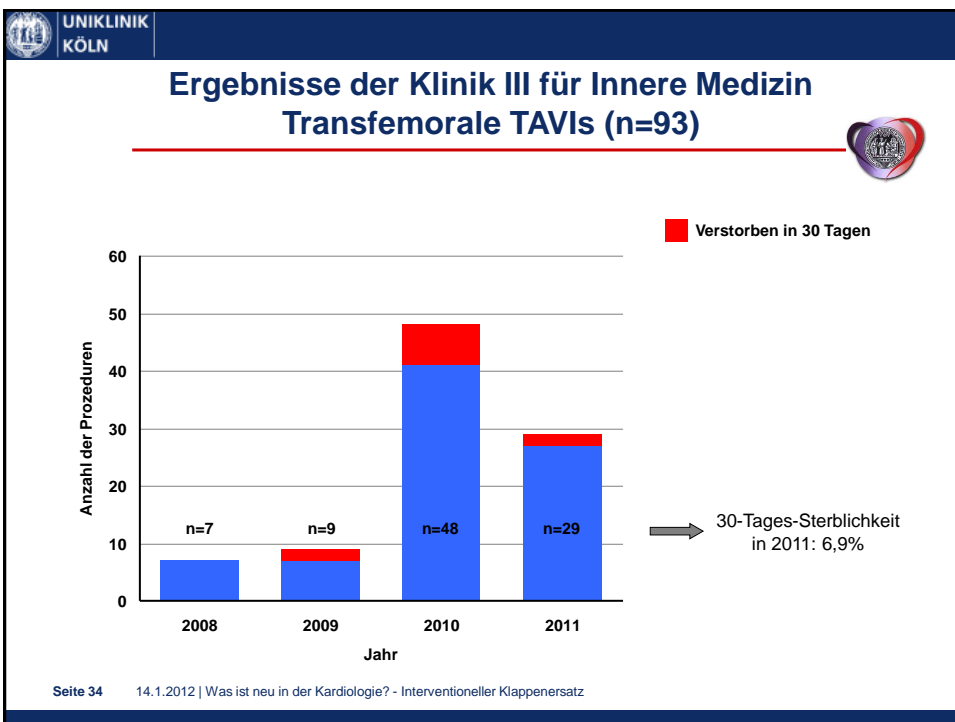
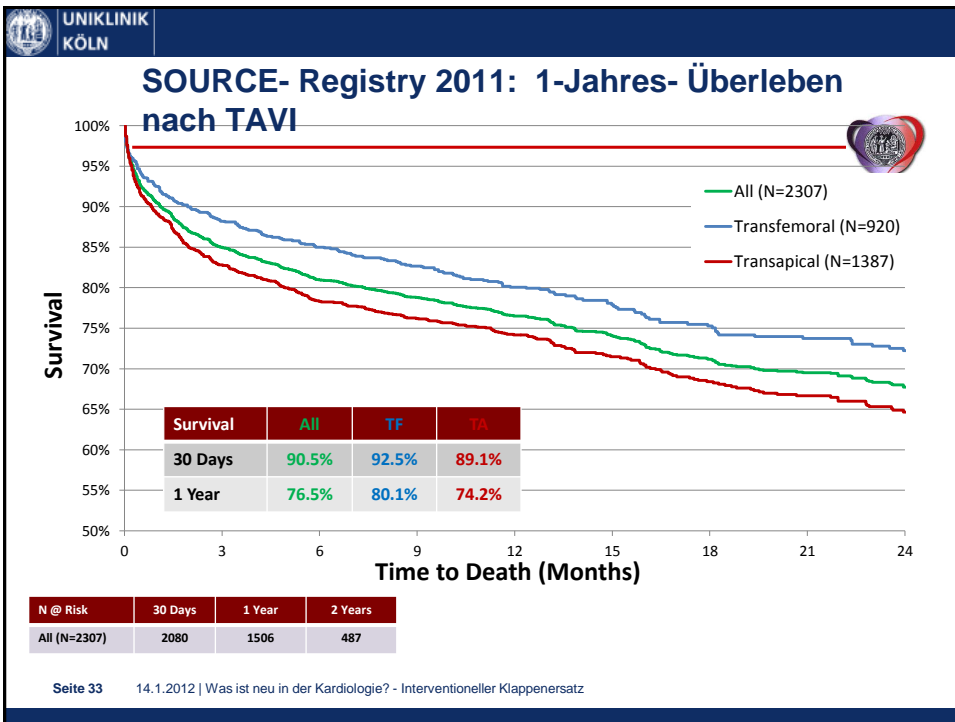
INTERVENTIONS
Transcatheter aortic-valve replacement or surgical aortic-valve replacement.

MEASUREMENTS AND MAIN RESULTS
At 1 year, the rate of all-cause mortality was 26.8% in the transcatheter group and 24.2% in the surgical group. The rate of mortality from aortic stenosis was 10.0% in the transcatheter group and 10.0% in the surgical group. The rate of mortality from aortic stenosis was 10.0% in the transcatheter group and 10.0% in the surgical group.



n=699
NYHA ≥ II
AOF < 0.8 cm²
dPmean > 40 mmHg
Vmax > 4.0 m/s
STSscore > 10%

“In patients with severe aortic stenosis transcatheter and surgical procedures for aortic valve replacement were associated with similar rates of survival at 1-year although there were important differences in peri-procedural risks” *C. R. Smith*

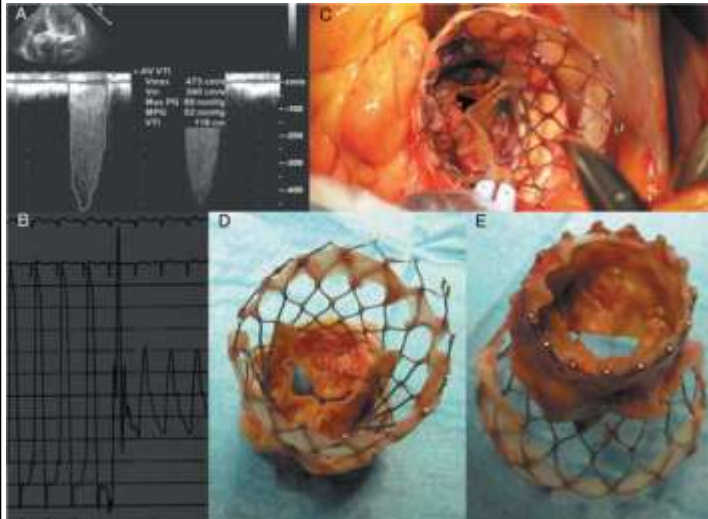




GUTES NEUES JAHR!



Langzeitergebnisse?



Rezidiv:
AKP-Stenose
Nach 5 Jahren