Programma

Voorjaarsvergadering

17 mei 2019

Pathé Utrecht (voorheen Cinemec)

Nederlandse Vereniging voor
Thoraxchirurgie

Index

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Inschrijven voor deze voorjaarsvergadering kan via secretariaat@nvtnet.nl.

Deze voorjaarsvergadering wordt geaccrediteerd en gewaardeerd met 8 punten.

Alle leden van de Nederlandse Vereniging voor Thoraxchirurgie wordt verzocht de presentielijst te tekenen. De leden die voor accredidatie in aanmerking komen ontvangen na het tekenen van de presentielijst een deelnamebevestiging per mail en de behaalde accreditatiepunten worden bijgeschreven in het persoonlijk dossier in GAIA.

Algemene Ledenvergadering

Toegang tot de algemene ledenvergadering hebben alle gewone leden van de vereniging, alle bestuursleden, alle ereleden, alle senior leden alsmede de voorzitter en secretaris van de Juniorkamer.

Programma en Zaalindeling

Tijd	Onderdeel	Zaal
8.50 – 9.20 uur	Ontvangst en inschrijving	Foyer
9.20 uur	Opening door de voorzitter	
9.30 – 10.45 uur	Wetenschappelijke vergadering - abstracts Sessievoorzitters: J. Grandjean en M. Verkroost	Zaal 2
9.30 uur	**F.M. Rijnberg** HEPATIC VENOUS BLOOD FLOW CONTRIBUTION TO TOTAL EXTRACARDIAC CONDUIT FLOW AND ASSESSMENT OF INFERIOR VENA CAVA-TO-EXTRACARDIAC CONDUIT MISMATCH IN FONTAN PATIENTS USING 4D FLOW MRI	
9.45 uur	**R.K. Kharbanda** SIMULTANEOUS ENDO-EPICARDIAL MAPPING OF THE HUMAN RIGHT ATRIUM: EXPLORING 3-DIMENSIONAL EXCITATION	
10.00 uur	**C.A.J. van der Heijden** HYBRID VERSUS CATHETER ABLATION IN PATIENTS WITH PERSISTENT AND LONGSTANDING PERSISTENT ATRIAL FIBRILLATION: A SYSTEMATIC REVIEW AND META-ANALYSIS	
10.15 uur	**B. Maesen** A MINIMALLY INVASIVE ALL-IN-ONE APPROUCH FOR PATIENTS WILT LAD DISEASE AND ATRIAL FIBRILLATION: FIRST SERIES	
10.30 uur	**E. van der Weijde** ACUTE TYPE A AORTIC DISSECTION: SINGLE-CENTER EXPERIENCE IN >250 PATIENTS USING A PROTOCOLIZED APPROACH	

PROGRAMMA EN ZAALINDELING

Tijd	Onderdeel	Zaal
10.45 – 11.15 uur	Koffiepauze	Foyer
11.15 – 12.30 uur	Algemene Ledenvergadering	Zaal 2
11.15 – 12.30 uur	Alternatief programma juniorkamer, NP'ers en PA's	Zaal 3
12.30 – 13.30 uur	Lunch	Foyer
13.30 – 14.45 uur	Themasessie: "Innovatie met korte pitches van diverse Nederlandse hartchirurgische centra"	Zaal 2
14.45 – 15.15 uur	Koffiepauze	Foyer
15.15 – 16.30 uur	Wetenschappelijke vergadering - abstracts Sessievoorzitters: E. Natour en G. Bol Raap	Zaal 2
15.15 uur	**N.M.A.J. Timmermans** MID-TERM FOLLOW UP AND RATE OF REINTERVENTION AFTER BIOLOGICAL AORTIC VALVE REPLACEMENT: A SINGLE-CENTER EXPERIENCE WITH THREE DIFFERENT TYPES OF BIOPROSTHESES	
15.30 uur	**A.H.J. Petrus** IMPACT OF RECURRENT MITRAL REGURGITATION AFTER MITRAL VALVE REPAIR FOR FUNCTIONAL MITRAL REGURGITATION – LONG-TERM ANALYSIS OF COMPETING OUTCOMES	
15.45 uur	**J. Sjatskig** THE USE OF PERCUTANEOUS VACUUM-ASSISTED THROMBECTOMY DEVICE FOR INTRACARDIAC AND INTRAVASCULAR PATHOLOGY; MULTICENTER EXPERIENCE	
16.00 uur	**B.J.J. Velders** HISTOMORPHOLOGY OF STANFORD TYPE-A AORTIC DISSECTION	

PROGRAMMA EN ZAALINDELING

Tijd	Onderdeel	Zaal
16.15 uur	**A. van Broekhoven** ORTHOPEDIC SURGERY CHANGES AORTIC VALVE COMPOSITION IN APOE-/- MICE	
16.30 uur	Borrel	Foyer
16.30 – 17.00 uur	Tekenen voor accreditatie	Inschrijf-balie
16.45 – 17.00 uur	**Uitreiking assistentenprijs** Ter beschikking gesteld door de Nederlandse Vereniging voor Thoraxchirurgie	Foyer

Abstracts

9.30 uur

HEPATIC VENOUS BLOOD FLOW CONTRIBUTION TO TOTAL EXTRACARDIAC CONDUIT FLOW AND ASSESSMENT OF INFERIOR VENA CAVA-TO-EXTRACARDIAC CONDUIT MISMATCH IN FONTAN PATIENTS USING 4D FLOW MRI

FM Rijnberg[a], AAW Roest[b], VP Kamphuis[b], JJM Westenberg[c], MG Hazekamp[a]

Departments of Cardiothoracic surgery[a], Pediatric cardiology[b] and Radiology[c], Leiden University Medical Center, Leiden, The Netherlands

Purpose

The extracardiac conduit (ECC) Fontan procedure connects venous return from the inferior vena cava (IVC) and hepatic veins (HV) to the pulmonary arteries in single ventricle patients. The ECC lacks growth potential and whether implanted conduits are of adequate size in older Fontan patients is unknown. The aim was to assess the contribution of the hepatic veins on total ECC flow using 4D flow MRI and to determine the IVC-ECC mismatch factor.

Methods

Twenty-six Fontan patients underwent 4D flow MRI. ECC diameter was 16mm (n=18), 18mm (n=4) and 20mm (n=4). Flow and velocity was quantified using retrospective 2D planes at the IVC and ECC (Figure 1A-B). The relative increase in mean velocity in the ECC versus the IVC (IVC-ECC mismatch), and the increase in cross sectional area (CSA) and flow (Q) were determined.

ABSTRACTS

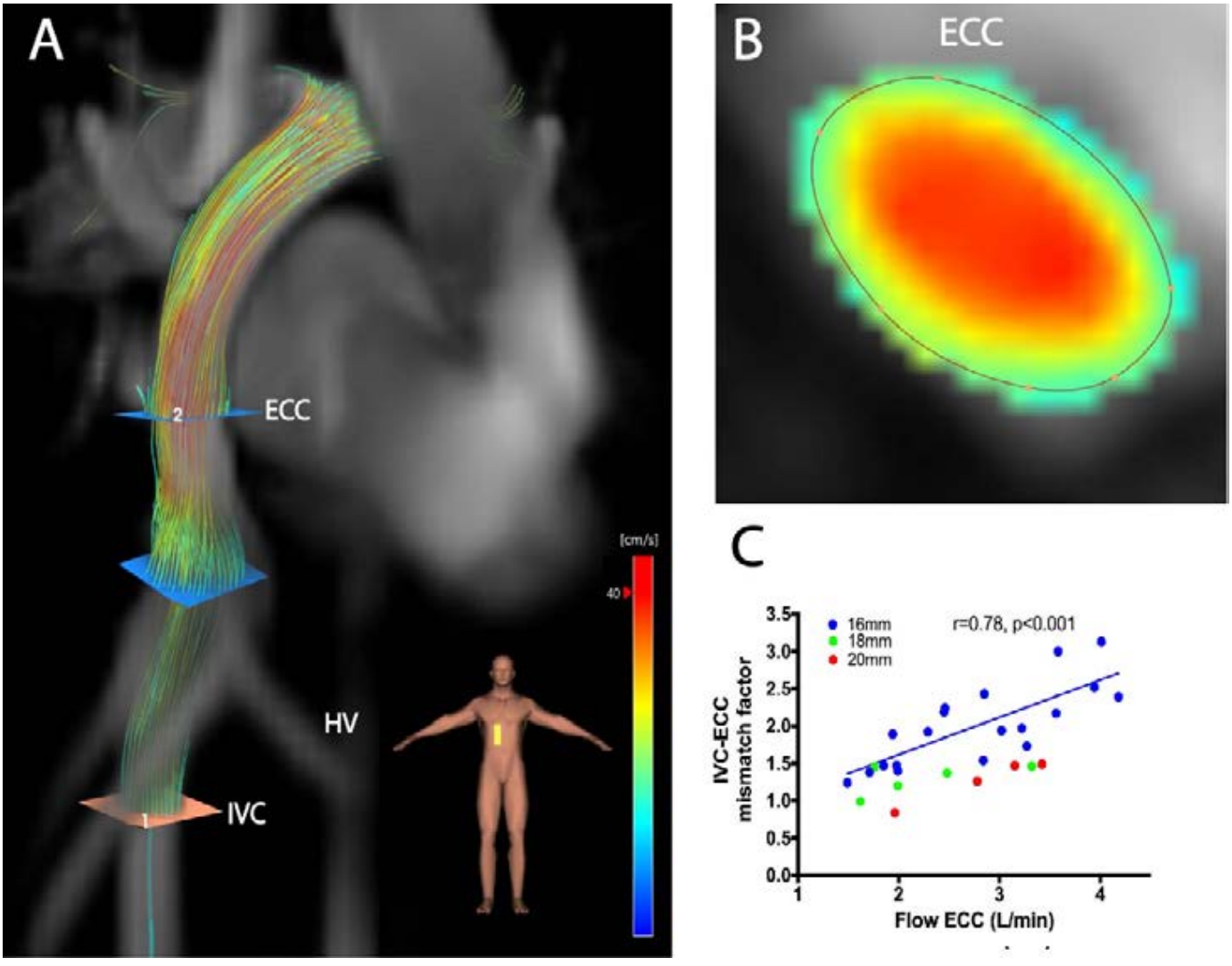
Results

Mean age at MRI was 14.7±3.0 years (BSA of 1.4±0.2m^2). Time-averaged Q_{IVC} and Q_{ECC} were 1.5±0.4 and 2.7±0.8 L/min. Time-averaged mean and max velocity were 11.8±2.1 and 19.5±3.4 cm/s at the IVC and 18.4 (IQR 14.8-25.0) and 34.2 (IQR 26.5-43.1) cm/s at the ECC. Mean increase in CSA from IVC to ECC was 10%±32% (range -29-84%). Mean increase in flow was 79% (IQR 63-91%), corresponding with a HV flow contribution of 43%±9% (range 23-62%) of Q_{ECC}. Mean IVC-ECC mismatch factor was 1.8±0.5. IVC-ECC mismatch correlated with Q_{ECC} in 16mm patients (Figure 1C).

Conclusions

IVC-ECC mismatch was most evident in 16mm patients and appear to be inadequate for older Fontan patients.

Figure 1



9.45 uur

SIMULTANEOUS ENDO-EPICARDIAL MAPPING OF THE HUMAN RIGHT ATRIUM: EXPLORING 3-DIMENSIONAL EXCITATION

RK Kharbanda[1,2], P Knops[2], M Roos[2], C Kik[1], YJHJ Taverne[1], FBS Oei[1], AJJC Bogers[1], NMS de Groot[2]

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[2]*Department of Cardiology, Erasmus Medical Center, Rotterdam*

Purpose

Atrial fibrillation (AF) progression is associated with asynchronous excitation of endo- and epicardial layers (endo-epicardial asynchrony, EEA). Our objective was to investigate the unknown relation between conduction block (CB) in the 2D endo- and epicardial layer and the degree of EEA.

Methods

In 80 patients (79% male, age 66±9 years) undergoing cardiac surgery, simultaneous endo-epicardial mapping (256 electrodes, interelectrode distance:2mm) of the inferior, middle and superior right atrium (RA) was performed during sinus rhythm (SR). Areas of CB were defined as conduction delays of ≥12ms, EEA as activation time differences of opposite electrodes of ≥15ms and transmural CB as CB at similar endo-epicardial sites.

Results

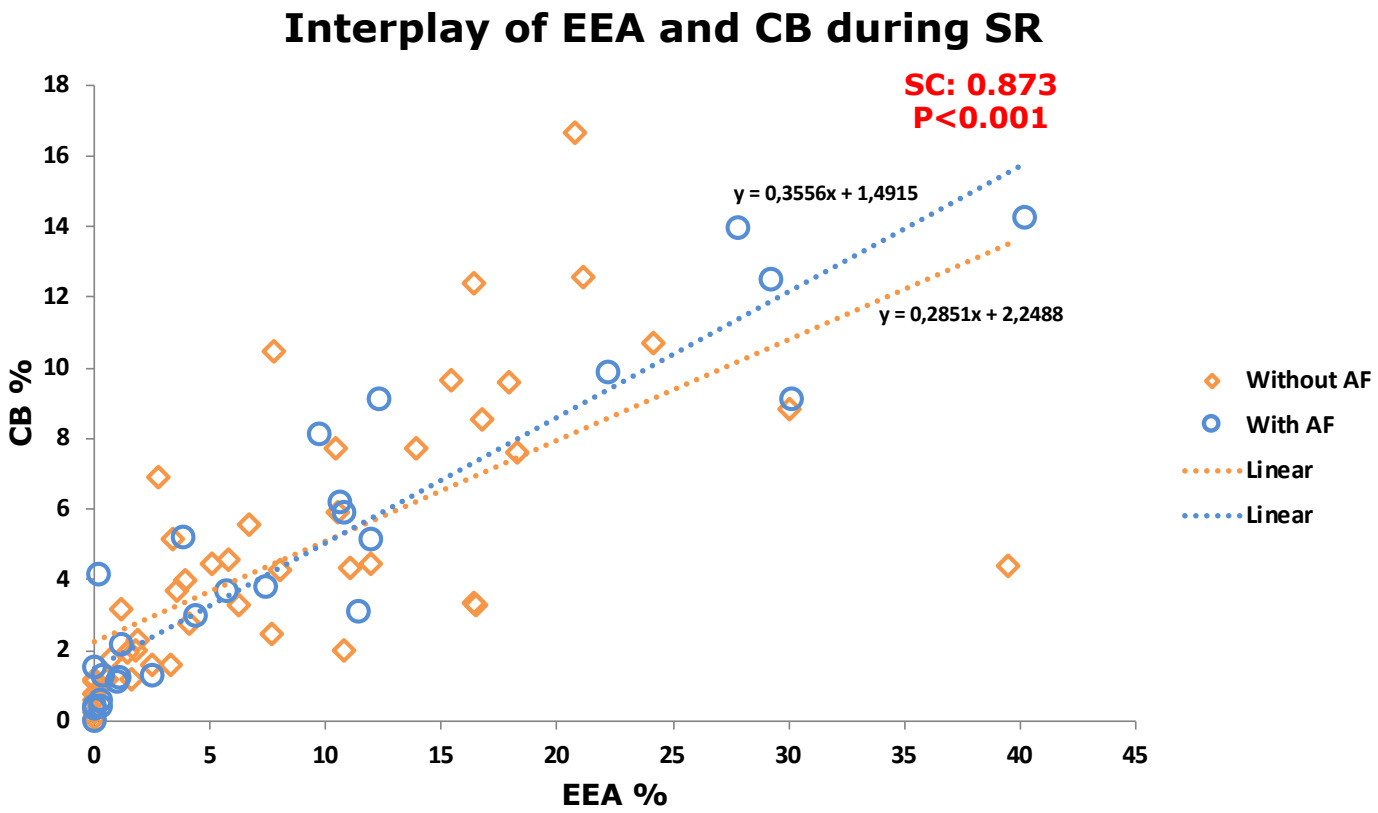
A total of 1395 SR beats were analyzed. CB occurred more frequently at the endocardium than the epicardium (Fig. 1). The incidence of (transmural) CB and EEA significantly increased from inferior to superior RA (both $p<0.001$). Transmural CB at the inferior RA was associated with a higher incidence of post-operative AF ($P=0.03$). Incidence of 2D CB was correlated with EEA severity –*occurring up to 84ms*- ($P<0.001$). EEA

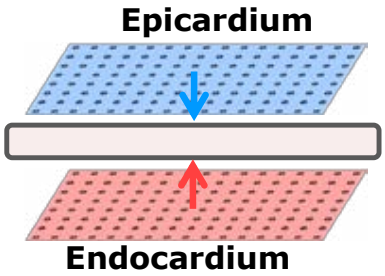
at the inferior RA was particularly present in patients with hypertension (P=0.009), diabetes (P=0.015) and hypercholesterolemia (P=0.015).

Conclusions

A considerable degree of EEA, also in the thinner RA wall, is already present during SR and seems to be facilitated by cardiovascular risk factors. Transmural CB, indicative of transmural structural damage, is related to post-operative AF. These findings emphasize complex relations between 3D excitation and arrhythmogenesis which needs to be further unraveled to improve AF therapy.

Fig. 1





Endo-epicardial differences in CB		
Location	Median % [IQR]	P-value
Superior RA	Epi 2.7 [0.9 - 5.6]	<0.001
	Endo 4.4 [1.5 - 9.3]	
Mid RA	Epi 1.3 [0 - 3.9]	0.025
	Endo 1.9 [0.3 - 5.2]	
Inferior RA	Epi 0.3 [0 - 1.4]	0.002
	Endo 0.8 [0 - 3.3]	

Legend

In the upper panel, a very strong correlation between CB and the severity of EEA is demonstrated (P<0.001, Spearman correlation= 0.87). This correlation seems to be stronger in patients with AF, however this was not statistically significant. In the lower panel the differences in CB between the epicardium and endocardium are demonstrated for the different parts of the right atrium.
CB= Conduction block, EEA= Endo-epicardial asynchrony, Endo= Endocardium, Epi= Epicardium

10.00 uur

HYBRID VERSUS CATHETER ABLATION IN PATIENTS WITH PERSISTENT AND LONGSTANDING PERSISTENT ATRIAL FIBRILLATION: A SYSTEMATIC REVIEW AND META-ANALYSIS

CAJ van der Heijden[1], M Vroomen[2], JG Luermans[1], R Vos[3], HJGM Crijns[2], S Gelsomino[3], M La Meir[4], L Pison[5], B Maesen[2]

[1]Maastricht University Medical Centre, Maastricht, [2]Maastricht University Medical Centre and Cardiovascular Research Institute Maastricht, Maastricht, [3]Maastricht University, Maastricht, , [4]Maastricht University Medical Centre, Maastricht and UZ Brussels, Brussels, [5]Ziekenhuis Oost Limburg, Genk

Purpose

As the mechanisms perpetuating persistent atrial fibrillation (AF) are still incompletely understood, no 'gold standard' ablation strategy, effectively targeting the AF-substrate, exists. Efficacy of catheter ablation of persistent AF is disappointing, independent of the ablation strategy applied. Hybrid ablation, combining a thoracoscopic epicardial and transvenous endocardial approach, has shown more favourable outcomes. To date, studies directly comparing both techniques are lacking.

Methods

A systematic literature search of studies reporting on catheter and hybrid ablation in patients with persistent or longstanding persistent AF was performed in the PubMed database. Of all identified articles (n=520) that were screened and checked for eligibility, 34 articles could be included. A meta-analysis was performed on inter-study heterogeneity and on pooled correlation between baseline characteristics, primary and secondary outcomes of hybrid and catheter studies in a random effects model.

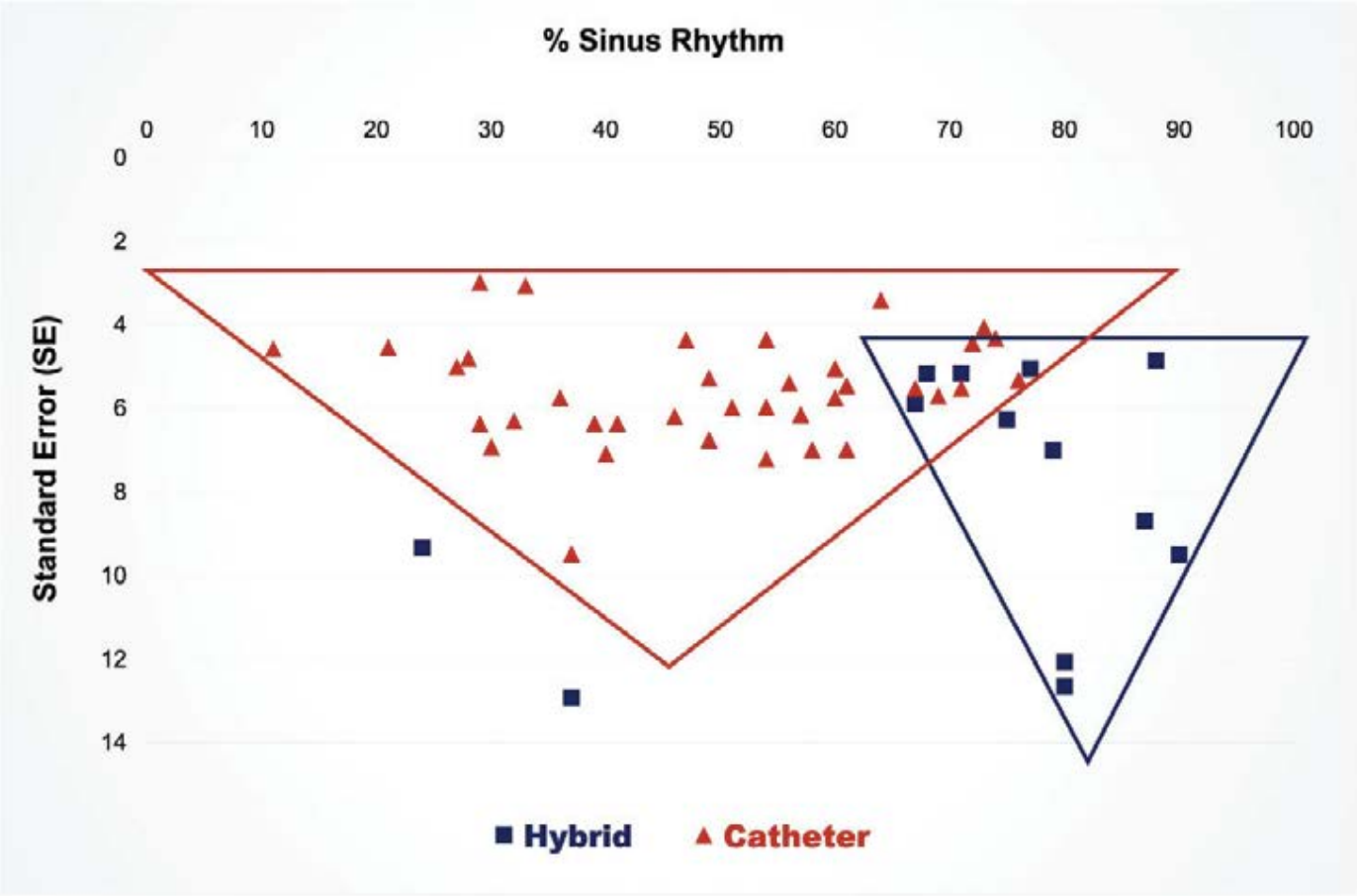
Results

In patients with persistent and longstanding persistent AF, hybrid ablation resulted in a higher freedom of atrial tachyarrhythmias than catheter ablation (70.7% vs 49.9%, P<0.001). Although hybrid ablation had a slightly higher complication rate, overall morbidity and mortality were low.

Conclusion

Compared to catheter ablation, hybrid ablation is more effective in maintaining sinus rhythm in patients with persistent and longstanding persistent AF. Our meta-analysis is limited by the fact that the available studies are small, heterogenic and single-arm, which hinders drawing definite conclusions. To validly demonstrate the efficacy benefit of hybrid over catheter ablation in patients with persistent AF, larger randomized controlled trials directly comparing both techniques are needed.

Figure 1:
Funnel plot. The percentage in sinus rhythm at the end of follow-up plotted against the standard error per study.



10.15 uur

A MINIMALLY INVASIVE ALL-IN-ONE APPROACH FOR PATIENTS WITH LAD DISEASE AND ATRIAL FIBRILLATION: FIRST SERIES

B Maesen*[1], P Segers*[1], M Vroomen[1], JG Luermans[1], P Barenburg[1], S Gelsomino[2], HJGM Crijns[1], J Maessen[1], M La Meir[3]

[1]Maastricht University Medical Center, Maastricht, [2]Maastricht University, Maastricht, [3]UZ Brussel, Brussels
**denotes equal contribution*

Purpose

The efficacy and safety of thoracoscopic AF ablation and direct coronary artery bypass (MIDCAB) grafting has been reported. To maximize the benefits of minimally-invasive procedures, we explored combining thoracoscopic AF ablation with MIDCAB. Here, our initial experience with the combination of these two minimally invasive beating-heart techniques is reported.

Methods

Left-sided thoracoscopic posterior left atrial (LA) wall isolation (bilateral pulmonary vein isolation, roof and inferior line) and LA appendage clipping was combined with MIDCAB using robotic left internal mammary artery (LIMA) harvesting in 9 patients (see Table).

Results

The procedure was successfully performed in all patients. Epicardial exit/entrance block was evaluated (all veins blocked in 9/9 patients, posterior wall blocked in 7/9 patients). LA appendage was occluded in all patients. Mean procedural time was 4h±33m. There were no major complications. One patient had a postoperative rise in CK levels (CK-MB/CK ratio <5%), but control angiography showed a patent LIMA-to-LAD. At the time of writing, Holter rhythm follow-up at 3 (6/9 patients) and 6 (4/9 patients)

months showed no AF recurrence after the blanking period. After 8 months, 1 patient underwent ablation for AVNRT.

Conclusion

This innovative procedure combines left-sided thoracoscopic AF ablation with MIDCAB and offers patients with AF and LAD disease an all-in-one truly minimally invasive approach. Based on our initial experience, the procedure seems safe and effective. However, more and longer follow-up data are needed. We believe that this novel technique is especially of interest for institutions focusing on patient-tailored treatment of arrhythmias and coronary artery disease.

TABLE

Characteristics	Patients (n=9)	Characteristics	Patients (n=9)
Female (%)	2 (22)	Previous ablation (%)	2 (22)
Age (years)	67 ± 9	LVEF (%)	55 ± 12
BMI	30 ± 4	LAVI (mL/m2)	46 ± 10
CHA_2DS_2-VASc	3 [2.75-4.5]	# patients with 3m FU	6/9
Paroxysmal AF (%)	2 (22)	% Freedom of ATA at 3m (n)	100 (6/6)
Persistent AF (%)	3 (33)	# patients with 6m FU	4/9
Longstanding persistent AF (%)	4 (45)	% Freedom of ATA at 6m (n)	100 (4/4)

Table:
Patient characteristics and outcome. BMI=body mass index, AF=atrial fibrillation, LVEF=left ventricular ejection fraction, LAVI=left atrial volume index, FU=follow-up, ATA=atrial tachy-arrhythmias

10.30 uur

ACUTE TYPE A AORTIC DISSECTION: SINGLE-CENTER EXPERIENCE IN >250 PATIENTS USING A PROTOCOLIZED APPROACH

E van der Weijde, C Mariani, H Smeenk, RH Heijmen

St Antonius Ziekenhuis, Nieuwegein.

Purpose

More extensive distal resection in Type A dissection repair is being argued. Conflicting data, however, exist on the occurrence of late aneurysm formation and re-operation rate. In this study, we retrospectively evaluated our protocolized surgical approach, for the short- and long term.

Methods

Retrospective analysis of all patients operated for acute DeBakey type I aortic dissection, between January 2005 and April 2016.

Results

A total of 256 patients were included. Re-operation, acute stroke, and visceral malperfusion was present in 10%, 3%, and 3%, respectively. Proximally, the valve and/or root was replaced in 5% and 17%, respectively. Distally, a hemi- or total arch was performed in 83% and 18%, respectively. Overall 30-days mortality was 12.1%. New onset stroke and spinal cord ischaemia was observed in 8.9% and 0.8%, respectively. Follow-up was 99% complete, with a mean of 69 months. Survival at 1-year, 3-years, 5-years, and 10-years were 95%, 92%, 86% and 74%, respectively. Proximally, reoperation was performed in 3.6% of the surviving patients. Distally, 12.1% underwent reoperation at the downstream aorta during follow-up. Not all patients, however, were fit for redo surgery. Of all surviving patients a total of 23% developed a

post-dissection dilatation downstream of ≥ 50mm, at a mean interval of 44 months. Freedom at 5-years was 81%.

Conclusion

Protocolized surgery for acute Type A aortic dissection has acceptable results in the short- and long-term. One in every 5 patients, however, develops a post-dissection dilatation downstream at 5-years, favouring a more extensive distal resection at the outset.

15.15 uur

MID-TERM FOLLOW UP AND RATE OF REINTERVENTION AFTER BIOLOGICAL AORTIC VALVE REPLACEMENT: A SINGLE-CENTER EXPERIENCE WITH THREE DIFFERENT TYPES OF BIOPROSTHESES.

NMAJ Timmermans, KY Lam, BMJ Koene, MA Soliman-Hamad, AHM van Straten

Catharina Ziekenhuis, Eindhoven

Purpose

The choice to implant biological valve prosthesis is influenced by the issue of durability. We investigated the rate and cause or reintervention of three different aortic valve bioprostheses.

Methods

All patients who underwent aortic valve replacement (AVR) with the use of biological valve prosthesis between October 2009 and December 2018 were included in the study. Three different bioprostheses were used and compared: Carpentier-Edwards (CE), Trifecta (TRI) and Mitroflow (MIT). The primary end point was the rate of explants. The event-free survival and possible predictors for reintervention were also analyzed.

Results

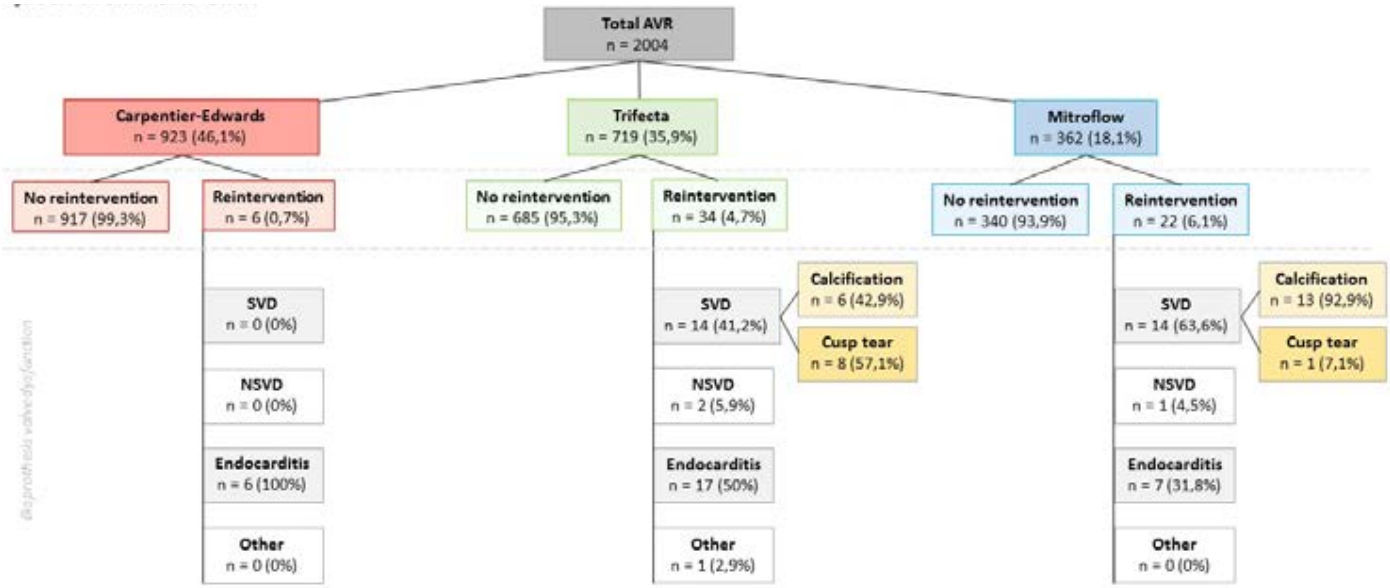
In total, 2004 biological aortic valve prostheses were implanted, including 923 CE, 719 TRI and 362 MIT bioprostheses. The CE group had a significantly higher event-free survival (n=917; 99.3%) compared to the TRI (n=685; 95.3%) and MIT (n=340; 93.9%) group; p=0.0001. The main cause of reintervention in the CE group was endocarditis (n=6; 100%), while structural valve deterioration (SVD) was the most common reason for reintervention in the TRI (n=14; 41.2%) and MIT (n=14; 63.6%)

group. Cox analysis revealed that only age (HR 0.942, 95% CI 0.914-0.971, P = 0.000) and type of prosthesis (TRI: HR 6.335, 95% CI 2.638-15.213, P < 0.0001; MIT: HR 6.037, 95% CI 2.403-15.167, P < 0.0001) were associated with lower event-free survival.

Conclusion

According to this single-center analysis, the rate of reintervention after implantation of the Carpentier-Edwards bioprosthesis is lower than that of both Trifecta and Mitroflow bioprostheses. Further investigations with larger patient populations and longer follow-up are needed to verify our findings.

Figure 1:
Flow chart Reintervention after AVR using bioprosthesis.



AVR, Aortic Valve Replacement; NSVD, Nonstructural Valve Deterioration; SVD, Structural Valve Deterioration

15.30 uur

IMPACT OF RECURRENT MITRAL REGURGITATION AFTER MITRAL VALVE REPAIR FOR FUNCTIONAL MITRAL REGURGITATION – LONG-TERM ANALYSIS OF COMPETING OUTCOMES

AHJ Petrus, OM Dekkers, LF Tops, E Timmer, RJM Klautz, J Braun

Leids Universitair Medisch Centrum, LUMC

Purpose

Recurrent mitral regurgitation (MR) has been reported after mitral valve repair for functional MR. However, the impact of recurrent MR on long-term survival remains poorly defined. In the present study, mortality-adjusted recurrent MR rates, the clinical impact of recurrent MR and its determinants were studied in patients after mitral valve repair with revascularization for functional MR in the setting of ischaemic heart disease.

Methods

Long-term clinical and echocardiographic outcome was evaluated in 261 consecutive patients who underwent restrictive mitral annuloplasty and revascularization for moderate to severe functional MR, between 2000-2014.

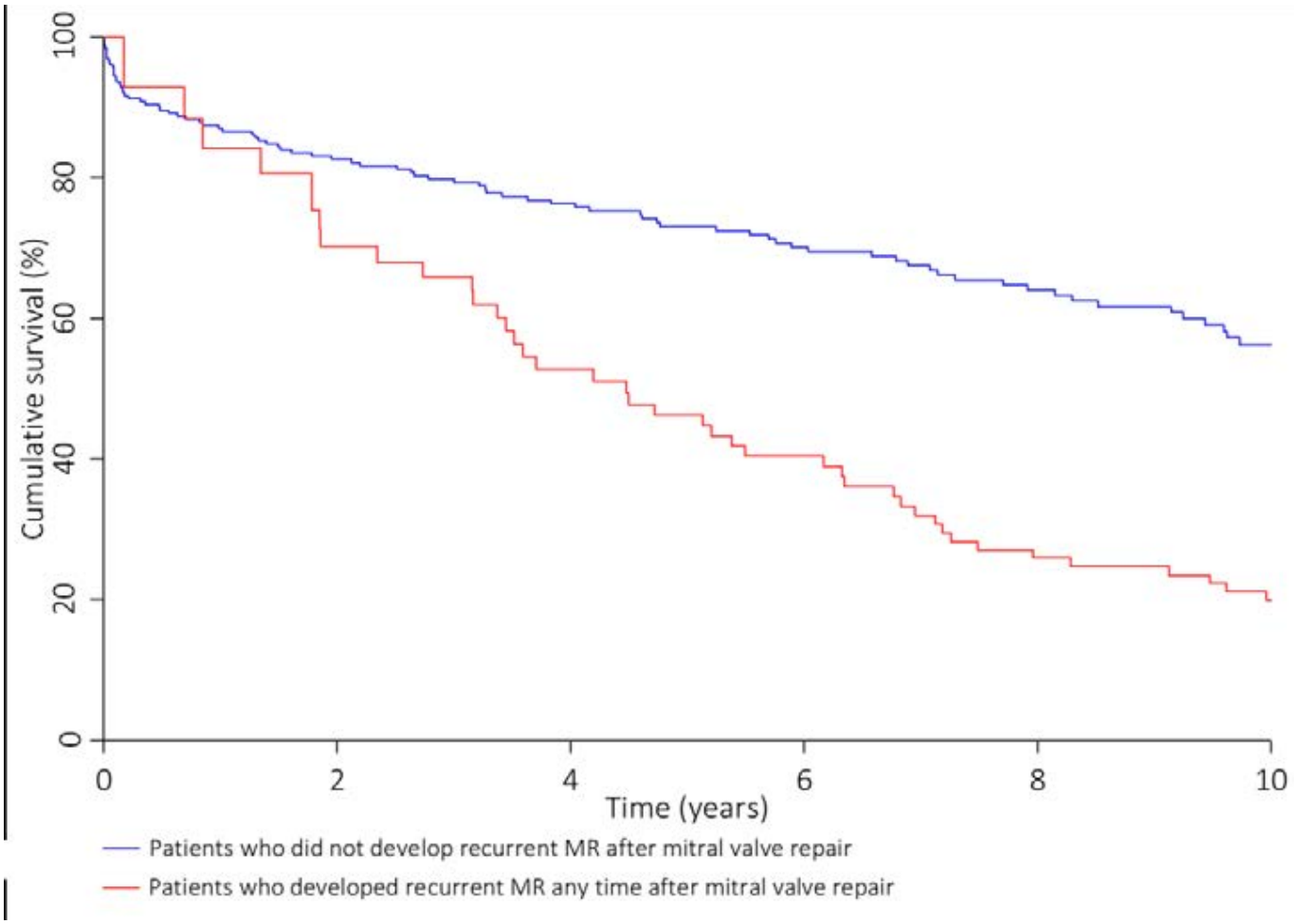
Results

Cumulative incidence of recurrent MR ≥grade 2, assessed by competing risk analysis, was 9.6±1.8% at 1-year, 20.3±2.5% at 5-year and 27.6±2.9% at 10-year follow-up. Cumulative survival was 85.8% [81.0 – 90.0] at 1-year, 67.3% [61.1 – 72.6%] at 5-year and 46.1% [39.4 – 52.6%] at 10-year follow-up. Age, preoperative NYHA class III or IV, a history of renal failure and recurrence of MR expressed as a time-dependent

variable (HR 3.28 [1.87–5.75], p<0.001; Figure), were independently associated with an increased mortality risk. Female gender, a history of STEMI, a preoperative QRS duration ≥120ms, a higher preoperative MR grade, and a higher indexed left ventricular end-systolic volume, were independently associated with an increased likelihood of recurrent MR.

Conclusion

Mitral valve repair for functional ischaemic MR resulted in a low incidence of recurrent MR with favourable clinical outcome up to ten years after surgery. Presence of recurrent MR at any moment after surgery proved to be independently associated with an increased risk for mortality.



15.45 uur

THE USE OF PERCUTANEOUS VACUUM-ASSISTED THROMBECTOMY DEVICE FOR INTRACARDIAC AND INTRAVASCULAR PATHOLOGY; MULTICENTER EXPERIENCE.

J Sjatskig[1], NM Van Mieghem[2], F Bracke[1], D Dumay[3], R Hendrickx[4], P Lanen[4], N Verberkmoes[1]

[1]Heart Center Catharina, Eindhoven, The Netherlands, [2]Department of Cardiology, Erasmus Medical Centrum, Rotterdam, The Netherlands, [3]Department of Extracorporeal circulation, Erasmus Medical Centrum, Rotterdam, The Netherlands, [4]Department of Extracorporeal circulation, Catharina hospital, Eindhoven, The Netherlands

Purpose

To date, cardiac surgery has had an important role in the treatment of life threatening intracardiac or intravascular masses. We hypothesized that high suction percutaneous vacuum therapy could be a serious alternative.

Methods

High suction percutaneous vacuum therapy (AngioVac), is a new innovative method relying on well-known techniques from veno-venousaextracorporeal bypass. The AngiovacaCircuit with the AngioVacaCannula is used for suction. The cannula is a 22French coil-reinforced cannula with a balloon-expandable tip and can be inserted into a side port. It has been introduced in the Netherlands in 2017. This study describes the initial experience of several procedures performed in two centers. From a total of 7 patients, 5 patients suffered from right atrial masses due to infected leads, 1 patient suffered lung emboli and 1 patient with very high surgical risk was treated for left atrial mass.

Results

In all procedures the modified Seldinger technique was the preferred method for vascular access for both left and right femoral vein. After achieving an ACT of 300sec, the circuit was started at maximal flow of 0.5L/min and increased to full flow to reach maximal negative suction pressure of -400mmHg. Complete removal of thrombi or vegetations was achieved in 4(57%) patients. Partial thrombus removal was achieved in 2(29%) patients. One procedure was unsuccessful in the patient with attempt to remove the left atrial mass. One patient suffered a serious gastrointestinal bleeding postoperatively.

Conclusions

This study showed that percutaneous thrombectomy could be a game changer in the treatment of life threatening intracardiac or intravascular masses in selected group of patients.

16.00 uur

HISTOMORPHOLOGY OF STANFORD TYPE-A AORTIC DISSECTION

BJJ Velders, N Grewal, AC Gittenberger-De Groot, RJM Klautz, TJ Van Brakel, JHN Lindeman

Leiden University Medical Center (LUMC), Leiden

Purpose

The pathophysiologic basis of aortic dissection (AD) is largely unknown. Previous histopathological descriptions are inconsistent and use a highly heterogenous nomenclature. In an effort to systematically evaluate putative vessel wall defects in AD, we applied the recently issued consensus classification for aorta pathology (1).

Methods

Aortic wall specimen from 52 patients (mean age 62.7 years) with type-A dissections were collected. Autopsy tissues of 15 patients (mean age 63.4 years) served as controls. Aortic wall sections were stained with Hematoxylin-Eosin, Resorcin-Fuchsin, Movat pentachrome and CD31. Morphological examination was performed using the consensus classification (1). Furthermore, the location of the dissection plane and the location of the vasa vasorum in the aortic wall were quantified.

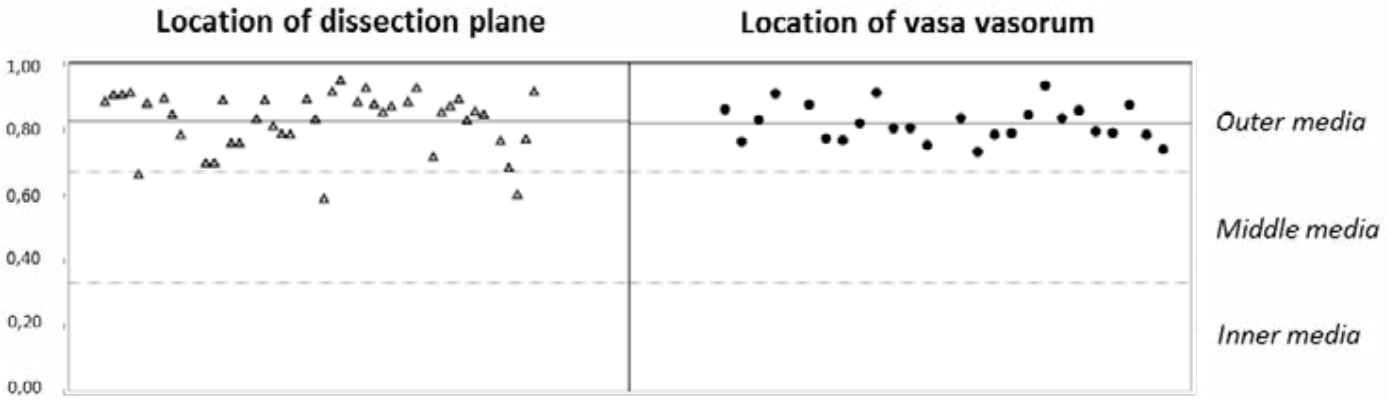
Results

Pathomorphology in aortic dissection mainly consisted of Mucoid Extracellular Matrix Accumulation (MEMA), Smooth Muscle Cell Nuclei Loss (SMCNL) and Elastic Medial Degeneration (EMD). The control group showed generally no signs of those histopathological features. The dissection plane coincided with the vasa vasorum network in the outer media (figure 1).

Conclusion

Mild degenerative medial defects (MEMA, SMCNL and EMD) are universally present in the middle media. The dissection plane is consistently found at the level of the aortic wall vascular plexus. On basis of our observations we hypothesize that AD is caused by a multiple hit mechanism which involves an intimal tear, an incompetent media and propagation along the plane of the vasa vasorum network.

Figure 1:
Location of dissection plane and vasa vasorum in the tunica media of the aortic wall. The location of the dissection plane (left) is showed by open triangles and the vasa vasorum (right) by dots. The lines through the values presents the mean location of the dissection plane (83%) and the mean location of vasa vasorum (82%). The interrupted lines are the borders between the inner, middle and outer media.



Reference:

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16.15 uur

ORTHOPEDIC SURGERY CHANGES AORTIC VALVE COMPOSITION IN APOE -/- MICE

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Purpose

Aortic valve stenosis (AVS) resembles the process of atherosclerosis in arteries in many ways. Recent studies suggest a role for acute systemic inflammation in atherosclerosis. We found that systemic inflammation induced by major orthopaedic surgery increased the atherosclerotic plaque area in the aorta in mice. We wondered whether orthopedic surgery also affects the AV.

Methods

We studied *ApoE-/-* mice that underwent the surgical procedure (AS group), *ApoE-/-* mice without surgery (AC group) and age-matched non-atherosclerotic mice *C57BL/6* (C group). Mice in the AS group and AC group were sacrificed 5 or 15 days post-surgery. AVs were assessed for valve size, fibrosis, glycosaminoglycans (GAGs), lipids, calcium deposits, iron deposits and inflammatory cells.

Results

AC mice demonstrated degenerative changes in the AV compared to the C group, indicative for an effect of the atherosclerotic diet hereon. Orthopedic surgery did not affect aortic valve (AV) thickening. However, a significant increase in GAGs 5 days after surgery (56.7 vs. 27.3; p=0.016) was found, combined with a borderline significant increase in fibrosis of the AV on day 15 post-surgery (41.3 vs. 24.9; p= 0.068). Furthermore, orthopedic surgery caused a significant decrease in the percentage of

lipids at day 5 (11.3 vs. 37.3; *p*=0.008). No significant differences in the number of inflammatory cells were observed upon orthopedic surgery. No calcium- nor iron deposits were detected in the AV in none of the groups.

Conclusion

Orthopedic surgery changes the composition of atherosclerotic AVs in time without influencing valve thickness or the number of intra-valvular inflammatory cells.

Routebeschrijving Pathé

(voorheen Cinemec)

Berlijnplein 100
3541 CM UTRECHT
Voor navigatie: Oude Vleutenseweg 33 te Utrecht

Met de auto vanaf Amsterdam (A2)

- Neem op de A2 afrit 7, richting Centrum/Muziektheater
- Ga na de afrit op de kruising linksaf richting Centrum/Muziektheater
- Bij de volgende kruising (voor de stoplichten), rechtsaf slaan richting P-Berlijnplein
- Volg P-Berlijnplein
- Volg de Pathé (voorheen Cinemec) P-borden dan komt u uit op het Pathé (voorheen Cinemec) parkeerterrein

Met de auto vanaf Arnhem (A12)

- Ga op de A12 richting Amsterdam (A2) en volg Lage Weide
- Rechts aanhouden, afslag 6-8 richting Maarssen/Utrecht Centrum
- Rechts aanhouden, neem afslag 8 richting Utrecht Langerak/Centrum
- Bij de kruising linksaf slaan richting Utrecht Langerak
- Sla vervolgens rechtsaf richting Leidsche Rijn Centrum
- Blijf de weg volgen (Valeriaanweg)
- Aan het eind van de weg sla rechtsaf richting Berlijnplein
- Sla vervolgens linksaf het Berlijnplein op voor invalide parkeerplek of rijd rechtdoor naar het Pathé (voorheen Cinemec) Parkeerterrein achter het gebouw.

  Let op! het lijkt alsof de weg is afgesloten, maar neem voor de afrastering de smalle weg, die u met een scherpe bocht naar links naar het parkeerterrein leidt.

Met het OV vanaf Utrecht Centraal

Er gaat 4x p/u een sprinter vanaf Centraal Station Utrecht naar station Leidsche Rijn (richting Woerden/Den Haag). De reistijd bedraagt 4 minuten. Vanaf station Leidsche Rijn is het slechts 4 minuten lopen naar Pathé (voorheen Cinemec). U kunt een snelle route lopen door onderaan bij het station via het bouwterrein over het Berlijnplein door te steken naar Pathé (voorheen Cinemec).

Wilt u met de bus reizen neem dan lijn 18 of 28 en stap uit bij station Leidsche Rijn Utrecht. U loopt in 4 minuten naar Pathé (voorheen Cinemec). Kijk voor actuele reistijden op 9292.nl