



**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**SESSIE 2: Imaging & diagnostics**

	Zaal: Limousin 2	Voorzitters: dr. Sandra Sanders- van Wijk, cardioloog Zuyderland dr. Rosemarijn Jansen, AIOS St. Antonius Ziekenhuis
1	09.00 - 09.10	<b>Stroke 6 Weeks after TAVI; Valve Thrombosis?</b> <i>Christiaan Overduin, St. Antonius, Nieuwegein</i>
2	09.11 - 09.21	<b>Genetic Architecture, Cardiac Magnetic Resonance Phenotyping, and Outcomes in Dilated and Non-dilated Left Ventricular Cardiomyopathy</b> <i>Astrid Heymans, Maastricht UMC+/CARIM, Maastricht</i>
3	09.22 - 09.32	<b>Impact of Aortic Valve Stenosis on the Photoplethysmography Signal Obtained at the Wrist: Towards Smartwatch-based Screening</b> <i>Lente Pol, Radboudumc, Nijmegen</i>
4	09.33 - 09.43	<b>Coronary CT Angiography Findings Drive Lipid-Lowering Therapy Initiation and Intensification in Clinical Practice</b> <i>Willem van de Vijver, Amsterdam UMC, Amsterdam</i>
5	09.44 - 09.54	<b>Real-world Blood Pressure Outcomes of the HartWacht Telemonitoring Program for Hypertension Management</b> <i>Youri Schut, Amsterdam UMC, Amsterdam</i>
6	09.55 - 10.05	<b>The Impact of Lipoprotein(a) on Coronary Atherosclerotic Plaque Phenotype</b> <i>Victor Verpalen, Amsterdam UMC, Amsterdam</i>
7	10.06 - 10.16	<b>Polygenic Risk Score and Coronary Plaque Burden in Subclinical Atherosclerosis</b> <i>Emilie Gaillard, Amsterdam UMC, Amsterdam</i>



**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Session 2: Imaging & diagnostics**

Abstract 1

**Stroke 6 Weeks after TAVI; Valve Thrombosis?**

Presenting author: D.C. Overduin

Department: Caridology

*D.C. Overduin (St. Antonius, Nieuwegein); D.C. Overduin (St. Antonius, Nieuwegein); P.J.A. van Nuland (St. Antonius, Nieuwegein); D.J. Ginkel (St. Antonius, Nieuwegein); M.J. Swaans (St. Antonius, Nieuwegein); J.M. ten Berg (St. Antonius, Nieuwegein)*

**Purpose:**

Stroke is a serious complication after TAVI, with risk remaining elevated for up to two years. Long-term stroke risk in TAVI patients may be linked to valve thrombosis, yet this is rarely screened for after stroke. This warrants attention.

**Methods:**

A patient with severe symptomatic aortic stenosis underwent TAVI using a supra-annular self-expanding valve. Septal hypertrophy caused multiple valve pop-outs during the procedure, so definitive deployment was intra-annular. Although the valve was underexpanded, no post-dilatation was performed due to concern for valve migration. Six weeks after TAVI, the patient experienced sudden hemiparesis, partially resolving spontaneously. Brain CT showed no acute lesions. Etiological screening revealed no arrhythmias or carotid pathology. Antiplatelet therapy was intensified with clopidogrel alongside aspirin. The patient was discharged the same day with only mild residual motor deficits.

**Results:**

Eight weeks after TAVI, follow-up echocardiography showed elevated transvalvular gradients despite normal leaflet motion. Given the elevated gradients in combination with a recent stroke, suspicion of valve thrombosis was raised. Cardiac CT revealed extensive hypoattenuated leaflet thickening with reduced leaflet motion, consistent with valve thrombosis. Antiplatelet therapy was replaced by full-dose apixaban. Five months after TAVI, echocardiography showed normalization of gradients; at one year after TAVI, CT demonstrated only minimal residual thickening. Apixaban was continued as lifelong medication.

**Conclusion:**

Thrombosis of a TAVI may cause stroke; cardiac CT is the gold standard for diagnosis, elevated echocardiographic gradients can be suggestive, and treatment with a DOAC is often effective.

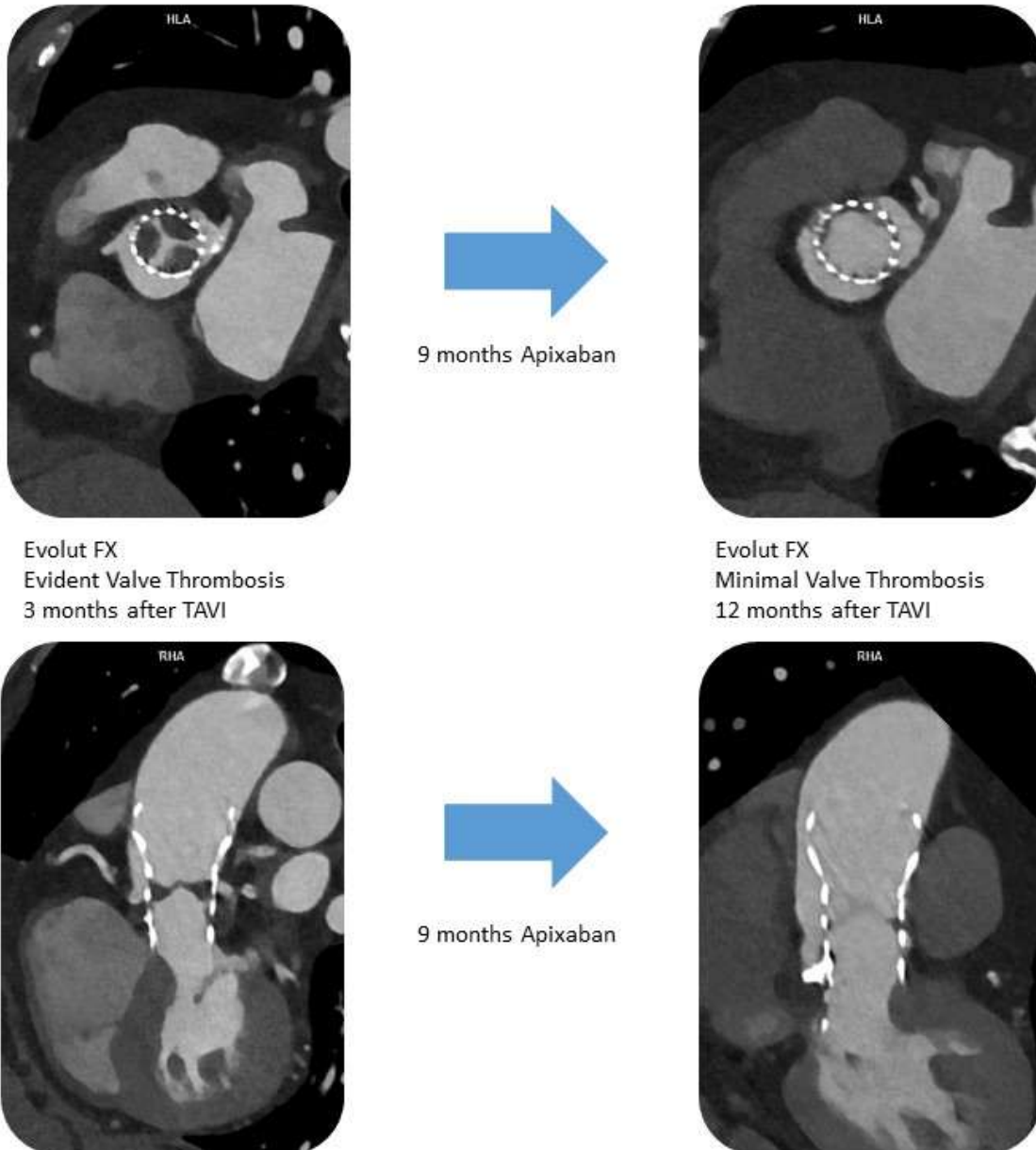
**Keywords:**

Stroke, TAVI, Valve Thrombosis



**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Figure:**  
Regression of Valve Thrombosis after 9 months Apixaban Treatment.





**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Session 2: Imaging & diagnostics**

Abstract 2

**Genetic Architecture, Cardiac Magnetic Resonance Phenotyping, and Outcomes in Dilated and Non-dilated Left Ventricular Cardiomyopathy**

Presenting author: A.B.M. Heymans

Department: Cardiology

*A.B.M. Heymans (Maastricht UMC+/CARIM, Maastricht); A.B.M. Heymans (Maastricht UMC+/CARIM, Maastricht); M.F.G.H.M. Venner (Maastricht UMC+/CARIM, Maastricht); A.G. Raafs (Maastricht UMC+/CARIM, Maastricht); N.J. Beelen (Maastricht UMC+/CARIM, Maastricht); S.L.V.M. Stroeks (Maastricht UMC+/CARIM, Maastricht); R.M.A. ter Bekke (Maastricht UMC+/CARIM, Maastricht); K. Vernooij (Maastricht UMC+/CARIM, Maastricht); S.R.B. Heymans (Maastricht UMC+/CARIM, Maastricht); J.A.J. Verdonschot (Maastricht UMC+/CARIM, Maastricht)*

**Purpose:**

To compare clinical, imaging, and genetic characteristics of dilated cardiomyopathy (DCM) and the distinct non-dilated left ventricular cardiomyopathy (NDLVC) phenotype, and identify phenotype-specific predictors of ventricular arrhythmia (VA) and heart failure (HF).

**Methods:**

Clinical data, cardiac magnetic resonance (CMR) with late gadolinium enhancement (LGE; 17-segment model), and pathogenic/likely pathogenic (P/LP) variants in DCM/arrhythmogenic cardiomyopathy-associated genes were collected. Phenotype-specific uni- and multivariable Cox models evaluated predictors of a composite VA/HF endpoint.

**Results:**

In 1130 patients (NDLVC n=318, DCM n=812), NDLVC patients were more often male (71.7 vs 58.7%,  $p<0.001$ ), had higher left ventricular ejection fraction (LVEF 41.43 vs 32.03%,  $p<0.001$ ) and more frequent LGE (37.4 vs 26.8%,  $p<0.001$ ). Over a median follow-up of 6.2 years, composite event rates were similar (22.33 vs 23.40%,  $p=0.716$ ). In multivariable analyses, LGE independently predicted outcomes in NDLVC ( $p=0.036$ ), whereas male sex ( $p=0.040$ ) and increasing left atrial volume index ( $p=0.044$ ) were predictive in DCM. LVEF was not independently associated with outcomes. Septal LGE was more prevalent in DCM and associated with adverse outcomes ( $p=0.036$ ). P/LP variant prevalence was comparable, with TTN variants most frequent (9.2 vs 10.3%). P/LP arrhythmogenic variants independently predicted outcomes in both phenotypes ( $p=0.012$ ,  $p=0.040$ ). Baseline PVC burden ( $p=0.024$ ,  $p=0.005$ ) and NSVT ( $p<0.001$ ,  $p=0.003$ ) were univariably associated with outcomes, without differential progression during follow-up.

**Conclusion:**

Despite more preserved ventricular structure and function at diagnosis, NDLVC patients experienced VA/HF event rates similar to DCM. Across phenotypes, arrhythmogenic genetic variants and myocardial fibrosis, rather than LVEF, were key determinants of outcome, supporting CMR- and genotype-guided risk stratification.

**Keywords:**

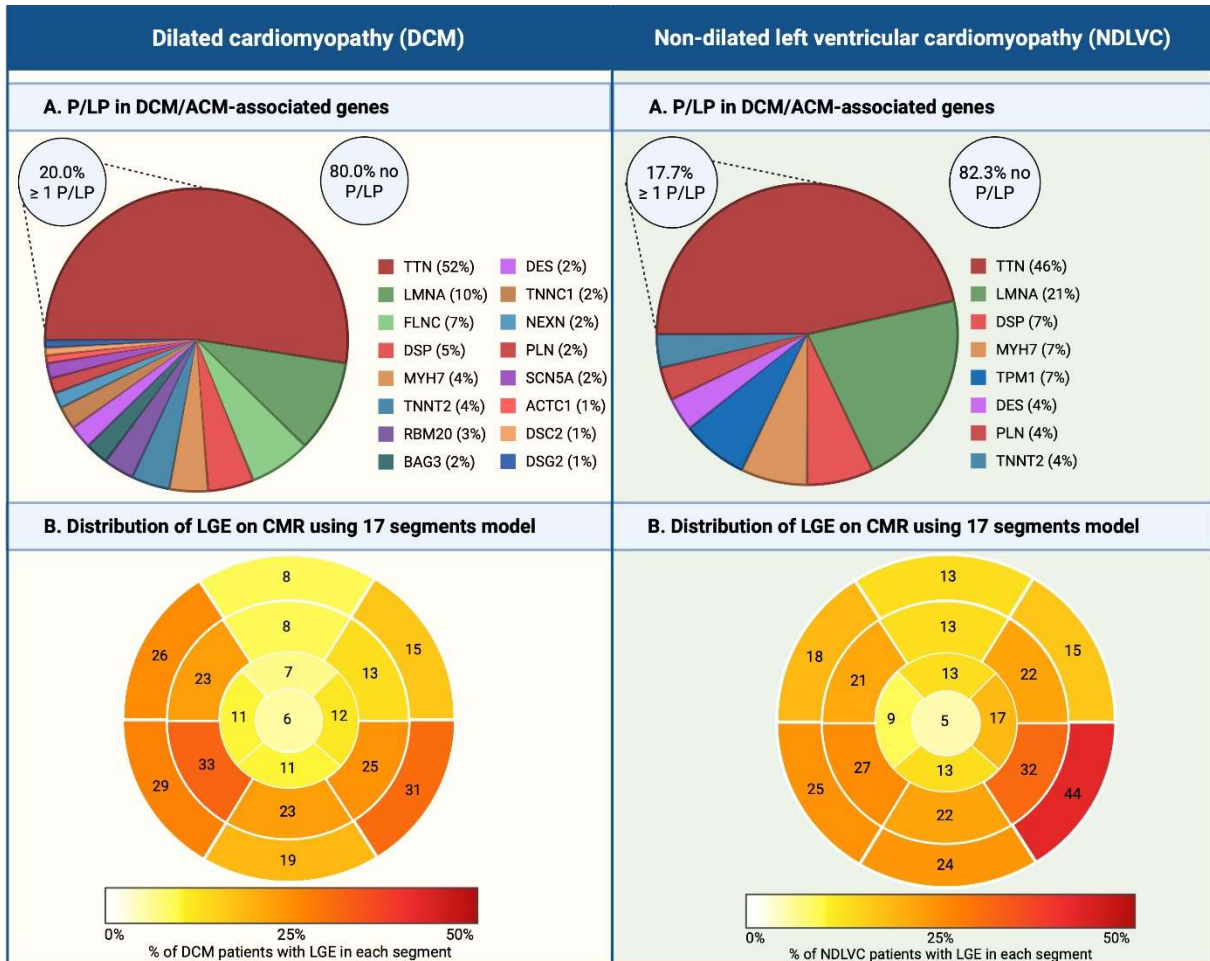
Dilated cardiomyopathy, Non-dilated left ventricular cardiomyopathy, Outcomes



**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Figure:**

Figure 1. Comparison of genetic profile and LGE distribution in DCM versus NDLVC





**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Session 2: Imaging & diagnostics**

Abstract 3

**Impact of Aortic Valve Stenosis on the Photoplethysmography Signal Obtained at the Wrist: Towards Smartwatch-based Screening**

Presenting author: L.R. Pol

Department: Cardiology

*L.R. Pol (Radboudumc, Nijmegen); C.E. Jansen (Radboudumc, Nijmegen); N. van Royen (Radboudumc, Nijmegen); R. Edgar (Radboudumc, Nijmegen); J.L. Bonnes (Radboudumc, Nijmegen)*

**Purpose:**

Photoplethysmography (PPG) captures the blood volume curve under the skin, which may be altered in the presence of aortic valve stenosis (AS). If so, PPG could serve as a simple, low-cost method for remote screening of AS. We studied wrist-derived PPG features between patients with and without AS.

**Methods:**

PPG data (128Hz) were collected using a wristband (CardioWatch 278-2) during transcatheter aortic valve implantation and routine transthoracic echocardiography. Data were filtered (bandpass: 0.5-7Hz) and motion artefacts removed. PPG features were calculated using the systolic peak and dicrotic notch and the median of 300 heartbeats was taken. Comparisons were made between no/mild AS and moderate/severe AS, classified by echocardiography.

**Results:**

In total, 100 patients with and 100 patients without AS were included. Patients with AS were older (80 (IQR 75-84) vs 71 (IQR 63-77)), had a higher systolic blood pressure (149±23 vs 136±21) and lower diastolic blood pressure (70±14 vs 79±11) than patients without AS ( $p < .001$ ). Heart rate did not differ ( $p = .431$ ). The time until systolic peak (0.27±0.03 vs 0.25±0.04) and dicrotic notch (0.43±0.05 vs 0.41±0.04) were longer in patients with AS ( $p < .001$ ). The relative systolic area under the curve (AUC) was increased in patients with AS (0.62±0.06 vs 0.59±0.06), while the relative diastolic AUC was decreased (0.34±0.07 vs 0.38±0.07) ( $p < .001$ ).

**Conclusion:**

This explorative study demonstrates a difference in features of the PPG signal between patients without and patients with AS. If patients with AS can be distinguished using PPG, this might enable screening for AS using a PPG-sensor incorporated in a smartwatch.

**Keywords:**

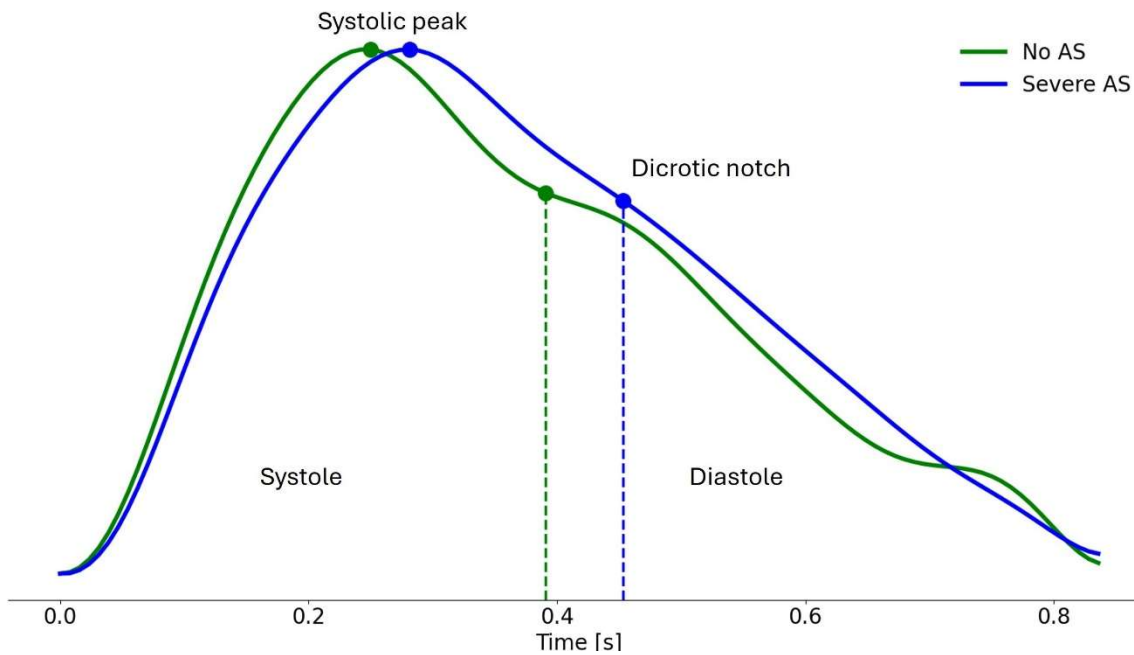
Aortic valve stenosis, Photoplethysmography, Smartwatch



**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Figure:**

Figure 1. Example of a PPG pulse corresponding to a heartbeat from a patient with severe AS (blue) and a patient without AS (green). The systole and the diastole are separated by the dotted lines. The systolic peak and dicrotic notch occur later in the patient with severe AS. The systolic AUC is larger in the patient with AS, while the diastolic AUC is smaller. Abbreviations: AUC = area under the curve, AS= aortic valve stenosis, PPG = photoplethysmography.





**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Session 2: Imaging & diagnostics**

Abstract 4

**Coronary CT Angiography Findings Drive Lipid-Lowering Therapy Initiation and Intensification in Clinical Practice**

Presenting author: W.R. van de Vijver

Department: Cardiology

*W.R. van de Vijver (Amsterdam UMC, Amsterdam); W.R. van de Vijver (Amsterdam UMC, Amsterdam & Cardiologie Centra Nederland, Utrecht); V.A. Verpalen (Amsterdam UMC, Amsterdam); J. Hennecken (Amsterdam UMC, Amsterdam); A.G. Somsen (Cardiologie Centra Nederland, Utrecht); I.I. Tulevski (Cardiologie Centra Nederland, Utrecht); R.A.P. Takx (Amsterdam UMC, Amsterdam); R.N. Planken (Mayo Clinic, Rochester); B.E.P.M. Claessen (Amsterdam UMC, Amsterdam); M.M. Winter (Amsterdam UMC, Amsterdam & Cardiologie Centra Nederland, Utrecht)*

**Purpose:**

Lipid-lowering therapy (LLT) is the cornerstone of cardiovascular prevention. Current strategies in primary prevention rely on traditional risk factors, while actual CAD burden and severity is often unaccounted for. Coronary CT angiography (CCTA) provides direct assessment of CAD. We examined whether CCTA findings prompt initiation or intensification of LLT by the treating cardiologist.

**Methods:**

We included 3,486 outpatients referred for CCTA due to anginal symptoms. LLT intensification was defined as initiation or up-titration of statins, addition of ezetimibe, or start of PCSK9 inhibitors within 90 days. Logistic regression evaluated whether CCTA findings were associated with LLT initiation or intensification. Imaging variables included any CAD, obstructive stenosis ( $\geq 50\%$ ), segment involvement score  $\geq 5$ , and high-risk plaque. The model was adjusted for age, sex, pre-test probability, baseline statin use, and LDL cholesterol.

**Results:**

LLT was initiated or intensified in 714 patients (20.5%). Any CAD (OR ~60.0), obstructive stenosis (OR 4.4), and SIS  $\geq 5$  (OR 2.0) independently predicted initiation or intensification (all  $p < 0.001$ ). High-risk plaque showed a nonsignificant trend (OR 1.4).

**Conclusion:**

In patients undergoing CCTA, CAD burden and severity were independently associated with LLT initiation or intensification. These results show that CCTA findings directly guide lipid-lowering therapy beyond cardiovascular risk factors in clinical practice.

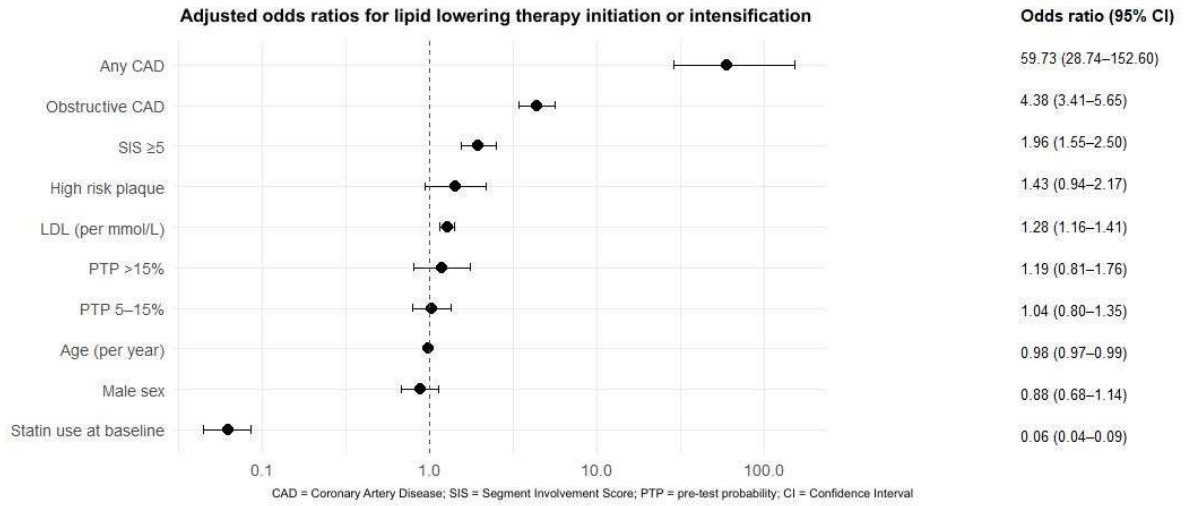
**Keywords:**

Coronary Artery Disease, Cardiovascular Risk Management, Coronary CT Angiography



**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Figure:**





**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Session 2: Imaging & diagnostics**

Abstract 5

**Real-world Blood Pressure Outcomes of the HartWacht Telemonitoring Program for Hypertension Management**

Presenting author: Y. Schut

Department: Cardiology

*Y. Schut (Amsterdam UMC, Amsterdam); S. Blok (Amsterdam UMC, Amsterdam); N.J. van Steijn (Amsterdam UMC, Amsterdam); I.I. Tulevski (Cardiologie Centra Nederland, Amsterdam); F.M.A.C. Martens (Amsterdam UMC, Amsterdam); G.A. Somsen (Cardiologie Centra Nederland, Amsterdam), M.M. Winter (Amsterdam UMC, Amsterdam)*

**Purpose:**

Telemonitoring has emerged as a scalable and effective strategy to improve hypertension management, but real-world data from integrated programs remain limited. We therefore aimed to evaluate blood pressure (BP) outcomes of the implemented, Dutch telemonitoring program HartWacht in routine cardiology practice and identify predictors of BP control.

**Methods:**

In this retrospective observational cohort study, hypertensive patients from outpatient cardiology clinics enrolled in the program between August 2016 and December 2024 were included. Patients performed structured home BP monitoring with protocol-based follow-up for lifestyle modification and medication uptitration when indicated. Primary outcomes were change in home BP and the proportion of patients achieving BP control, defined as a mean home BP <140/90 mmHg during the final month of participation. Multivariable logistic regression was used to identify predictors for BP control.

**Results:**

A total of 592 patients were included (mean age 61.8±11.3 years; 44% female), using a mean of 2.9±1.3 antihypertensive agents. Baseline office BP was 161/92 mmHg. Mean home BP was 143/87 mmHg during the first month, with 38% achieving BP control. At program exit, mean home BP decreased to 135/83 mmHg (-8/-4 mmHg; p<0.001), and 57% achieved BP control. Higher body mass index, type 2 diabetes, and elevated office systolic BP were independently associated with lower odds of achieving BP control.

**Conclusion:**

In clinical practice, structured hypertension telemonitoring was associated with clinically meaningful BP reductions and increased BP control rates. However, patients with obesity, diabetes, and higher baseline systolic BP remain at increased risk of uncontrolled hypertension, indicating the need for additional support and tailored management strategies within telemonitoring programs.

**Keywords:**

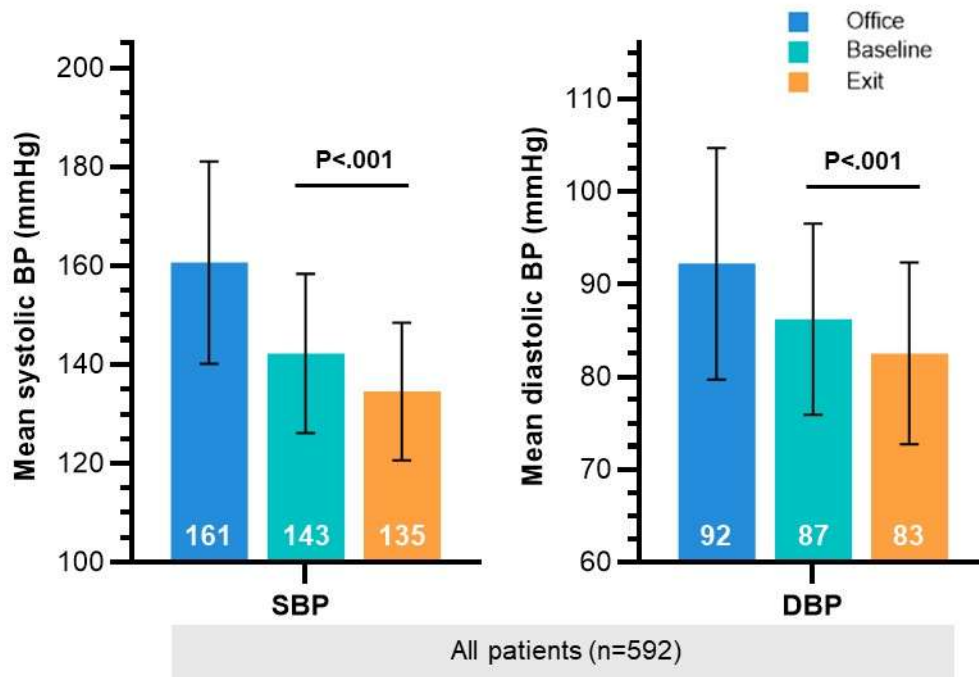
Hypertension, Telemonitoring,



**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Figure:**

Blood pressure (BP) outcomes in the total cohort. Office BP was defined as the mean of the last office BP readings taken in an outpatient office visit. Baseline BP was the mean of BP readings taken over the first month period at home after enrollment. Exit BP was defined as the mean of BP readings taken in the last month of active participation. Error bars indicate standard deviations.





**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Session 2: Imaging & diagnostics**

Abstract 6

**The Impact of Lipoprotein(a) on Coronary Atherosclerotic Plaque Phenotype**

Presenting author: V.A. Verpalen

Department: Cardiologie

*V.A. Verpalen (Amsterdam UMC, Amsterdam); V.A. Verpalen (Amsterdam UMC, Amsterdam); C.F. Coerkamp (Amsterdam UMC, Amsterdam); S. Malkasian (UC San Diego Health, San Diego); E.L. Gaillard (Amsterdam UMC, Amsterdam); C.Y.Y. Beverloo (Amsterdam UMC, Amsterdam); S. Ibrahim (Amsterdam UMC, Amsterdam); W.R. van de Vijver (Amsterdam UMC, Amsterdam); B.E.P.M. Claessen (Amsterdam UMC, Amsterdam); P. Knaapen (Amsterdam UMC, Amsterdam); R.A.P. Takx (Amsterdam UMC, Amsterdam); R.N. Planken (Amsterdam UMC, Amsterdam); E.S.G. Stroes (Amsterdam UMC, Amsterdam); J.P.S. Henriques (Amsterdam UMC, Amsterdam); N.S. Nurmohamed (Amsterdam UMC, Amsterdam)*

**Purpose:**

Lipoprotein(a) (Lp[a]) is a causal risk factor for cardiovascular events. However, the effect of Lp(a) on coronary plaque composition and high-risk plaque (HRP) features has not been fully characterized. This study aimed to investigate the association of Lp(a) with coronary atherosclerotic plaque phenotype at the plaque level.

**Methods:**

This study included 710 patients who underwent coronary computed tomography angiography (CCTA) and had Lp(a) measured between 2008 and 2024. CCTA scans were analyzed with a previously validated artificial intelligence-based algorithm (AI-QCT, Cleerly Inc.). The association of Lp(a) with noncalcified and calcified plaque volumes and HRP features was evaluated at the plaque level using generalized estimating equation models adjusted for traditional cardiovascular risk factors.

**Results:**

The 710 patients had a mean age of  $56 \pm 10$  years, 379 (53%) were male and a total of 3642 plaques were identified. Patients with elevated Lp(a) levels ( $\geq 150$  nmol/L) had a higher total plaque volume ( $71.6$  mm<sup>3</sup> vs  $53.0$  mm<sup>3</sup>;  $P=0.003$ ). In the adjusted plaque-level analysis, elevated Lp(a) ( $\geq 150$  nmol/L) was associated with an increase in noncalcified plaque volume per plaque ( $P=0.009$ ), but not with an increase in calcified plaque volume ( $P=0.81$ ). Furthermore, elevated Lp(a) ( $\geq 150$  nmol/L) was strongly associated with the presence of HRP at the plaque level (adjusted odds ratio: 1.79, 95% CI: 1.25-2.55,  $P=0.001$ ), whereas low-density lipoprotein cholesterol and high-sensitivity C-reactive protein were not ( $P>0.05$ ).

**Conclusion:**

In this plaque-level CCTA study, elevated Lp(a) levels were independently associated with increased noncalcified plaque volume and with the presence of HRP, but not with calcified plaque volume. These findings elucidate the impact of Lp(a) on unstable plaque phenotypes in a primary prevention population.

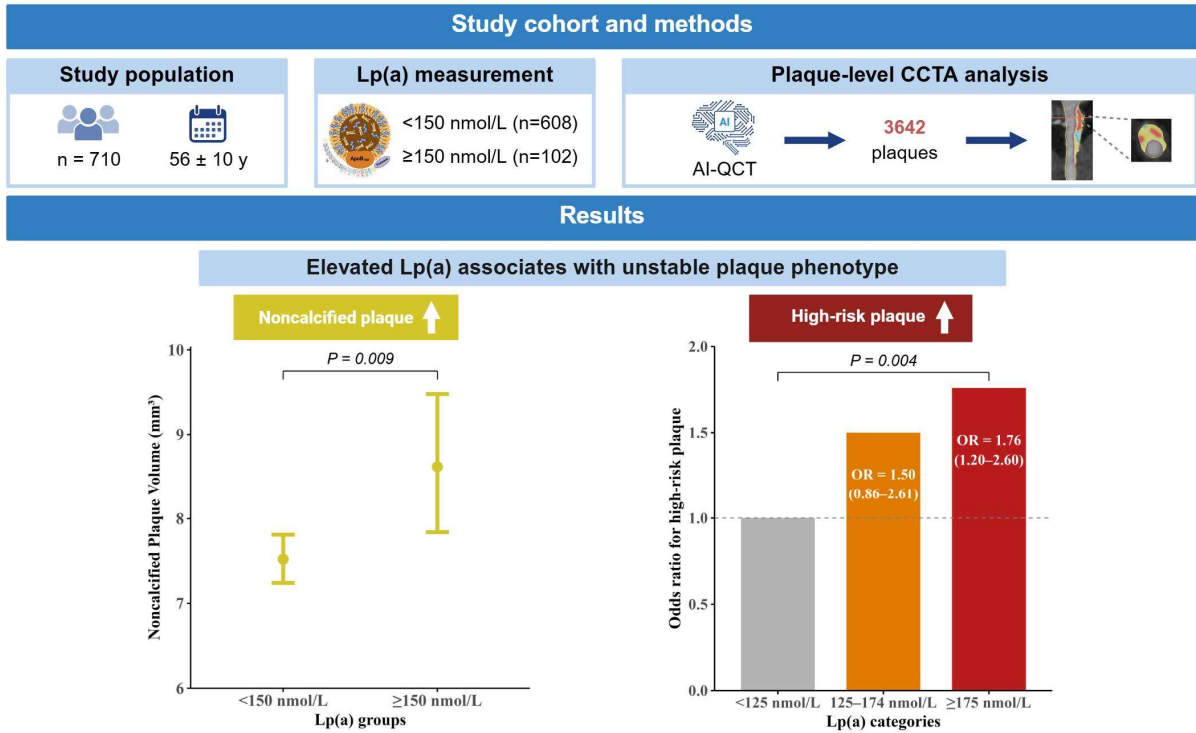
**Keywords:**

Atherosclerotic cardiovascular disease, Coronary computed tomography angiography, Lipoprotein(a)



**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

Figure:





**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Session 2: Imaging & diagnostics**

Abstract 7

**Polygenic Risk Score and Coronary Plaque Burden in Subclinical Atherosclerosis**

Presenting author: E.L. Gaillard

Department: Cardiologie en Vasculaire Geneeskunde

*E.L. Gaillard (Amsterdam UMC, Amsterdam); C.Y.Y. Beverloo (Amsterdam UMC, Amsterdam); M. Corver (Amsterdam UMC, Amsterdam); S.J. Jurgens (Amsterdam UMC, Amsterdam); N.S. Nurmohamed (Amsterdam UMC, Amsterdam); E.S.G. Stroes (Amsterdam UMC, Amsterdam)*

**Purpose:**

The association between coronary artery disease (CAD) polygenic risk score (PRS) and coronary plaque burden in patients with subclinical atherosclerosis is unclear. The goal of this study was to evaluate the relationship between CAD PRS and coronary plaque burden and high-risk plaque (HRP) features.

**Methods:**

Patients with subclinical atherosclerosis (CAD-RADS 1-2) on coronary computed tomography angiography (CCTA) underwent CAD PRS measurement. CCTA scans were analyzed with a previously validated artificial intelligence–based algorithm. The relationship between CAD PRS and percent atheroma volume (PAV) and HRP prevalence was assessed using linear and logistic regression models adjusted for age, sex, and conventional cardiovascular risk factors.

**Results:**

A total of 312 patients (mean age  $62 \pm 6$  years; 57% male) were included. Patients with high CAD PRS had higher PAV than those with low CAD PRS (0.03% vs 0.02%;  $P < 0.001$ ). Each standard deviation increase in CAD PRS was associated with a 0.008% higher PAV ( $\beta = 0.008$ ; 95% CI: 0.004-0.013;  $P < 0.001$ ) after multivariable adjustment. HRP prevalence increased across PRS groups: 46.8% (low), 50.3% (intermediate), and 67.2% (high). Patients with high CAD PRS had an OR of 3.16 (95% CI: 1.33-7.76;  $P = 0.010$ ) for having HRP compared with those with low CAD PRS.

**Conclusion:**

In patients with subclinical atherosclerosis, polygenic risk is independently associated with coronary plaque burden and high-risk plaque features.

**Keywords:**

Coronary artery disease, Polygenic risk score, Coronary computed tomography angiography



**ABSTRACTS**  
**NVVC Voorjaarscongres 2026**  
**Donderdag 16 april**  
**09.00 – 10.30 uur**

**Figure:**  
Association of CAD polygenic risk score with high-risk plaque.

