

in the frontal plane QRS axis (QRS axis). Since the scar-related VT morphology depends on the exit site, scar extension may influence a MI-VT morphology.

Objectives: To evaluate the prevalence of MI-VTs in a large group of post-IMI patients and the association between MI-VT ECG and the electroanatomical (EA) substrate.

Methods & results: Forty-seven consecutive post-IMI patients (72±10 years, 44 male, LVEF 37±13%) underwent EA mapping and radiofrequency catheter ablation (RFCA) were included. ECGs of all induced VTs were analysed for BBB configuration, QRS axis, the amplitude ratio SII/RI, precordial S/R ratios and transition. According to EA scar extension (dense scar BV<0.5mV) and the induction of a MI-VT based on concealed entrainment, ≥11/12 pace-map or VT termination by RF within the mitral isthmus, patients were classified: (A) MI-VT & dense scar within the basal segment(s) (n=7,15%), (B) MI-VT & scar extension towards mid segment(s) (n=8,17%) and (C) No MI-VT inducible (n=32,68%). From 148 induced VTs (10, 26 & 112 in groups A, B & C), 16 (11%) were proven MI-related. In group A, 7/10 induced VTs were MI related with either (1) LBBB (4/7), left superior (3/4) or left inferior (1/4) axis and transition≤V5 or (2) RBBB (3/7) with left superior axis, SII/RIratio≥1 and S/R<1 in leads V3 to V5. In group B, 9/26 VTs were MI related and in contrast to group A, all but one had RBBB with either right axis (4/9) or left axis (4/9) with either positive concordance or late transition. Of note, no RBBB MI-VT in group B had SII/RI≥1. Patients in group A had higher LVEF (48±3%, 33±9% & 34±13%; P=0.003 vs group B & 0.005 vs group C) and were more often acutely revascularized (57%, 25% & 16%, respectively). All VT-related mitral isthmuses in group A were located at the basal inferior-septal region whereas, in group B, mitral isthmus location was variable extending from inferoseptal to lateral mitral annulus. After RFCA, non-inducibility of any VT was 86%,50% and 31% in group A,B and C. During a median follow-up of 26 months (IQR17-39), VT recurred in 17 patients (37%). Patients in group A had a 3-year VT-free survival after RFCA of 100% compared to 45% (CI95%, 11-75%; P=0.038 vs group A) in group B and 56% in group C (CI95%, 32-75%; P=0.039 & 0.902 vs group A & B).

Conclusion: Specific VT 12 lead ECG patterns in patients after IMI are highly suspicious for a septal mitral isthmus bordered by the annulus and a basal scar. This limited substrate may be more likely in the reperfusion era with long term freedom of VT recurrence if targeted by RFCA.

REMOTE MONITORING

P1632

Clinical value of the implantable loop recorder in a tertiary referral center

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Background: Implantable loop recorders (ILR) are useful for the detection of infrequent arrhythmias and conduction disorders. Established indications are recurrent unexplained syncope, unexplained palpitations and cryptogenic stroke. Less is known on the clinical value of an ILR in high-risk patients for the early detection of ventricular arrhythmias (VA).

Purpose: To evaluate the diagnostic yield and consequences of an ILR in a tertiary referral center.

Methods: This single-center study included all consecutive patients (n=94) who received an ILR between March 2013 and December 2016. Follow-up was until diagnosis or for at least 6 months of follow-up. Patients were stratified according to the primary indication: syncope (n=35), palpitations (n=25) and high-risk group (n=34). The high-risk group consisted of patients with cardiomyopathy, primary electrical disease or congenital heart disease who were at risk for developing VA according to the treating physician. All patients had remote monitoring with daily transmissions.

Results: The cohort consisted of 94 patients (mean age 45±17 years, female 57%). During a median follow-up time of 10 months (interquartile range, 3-17 months), 42 patients (45%) had an ILR-guided diagnosis. The diagnostic yield was 46% in the syncope group, 48% in the palpitations group and 41% in the high-risk group. The

arrhythmogenic diagnosis was different per indication group (Figure). The most common diagnosis was sinus arrest; supraventricular tachycardia; and (non)sustained ventricular tachycardia in the syncope, palpitations, and high-risk group, respectively. Management based on the ILR-guided diagnosis is presented in the Table. As expected, there was a high percentage of pacemakers and catheter ablations in the syncope and palpitations group, respectively. In the high-risk cohort, 14% of patients with a diagnosis received an implantable-cardioverter defibrillator, however, the majority were treated with anti-arrhythmic drugs.

Conclusion: The current study confirms the role of an ILR in patients with syncope and palpitations. A new finding is the high diagnostic yield in the high-risk cohort which seems useful for risk stratification.

P1633

Ease of use and acceptance of remote monitoring of subcutaneous implantable cardioverter defibrillators

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Background: Remote monitoring (RM) of transvenous implantable cardioverter defibrillators (ICD) has been shown to improve patient safety and reduce in-office visits. The subcutaneous ICD (S-ICD) represents an effective alternative to traditional transvenous ICD and recently has been endowed with the RM functionality. At the time of scheduled remote interrogation, a button on the in-home monitor (LATITUDE NXT) flashes and the patient is requested to press it to activate the transmission.

Purpose: We assessed the ease of use of the system and the patient acceptance.

Methods: Patients implanted with S-ICD received the monitor and were followed up for 3 months. Weekly remote transmissions were programmed and a final structured questionnaire was administered to patients.

Results: A total of 45 patients were included in the analysis. All patients were able to perform transmissions. Overall, 574 remote transmissions were scheduled during follow-up, 544 (95%) were properly executed by the patients. The median rate of missing transmission was 0% (25th to 75th percentile, 0% to 7%). 504 (93%) transmissions were performed on the same day of the automatic notification. The remaining 40 transmissions were performed with an average delay of 2±1 days. For the majority of patients the transmission procedure was easy (88%), and 64% of them reported a general preference for remote versus in-clinic follow-up. All patients would recommend the system to other patients with S-ICD.

Conclusions: All patients were able to perform successful interrogations and the adherence to RM monitoring was high in this population of S-ICD patients. Moreover, our analysis suggests an overall positive acceptance of the system.

P1634

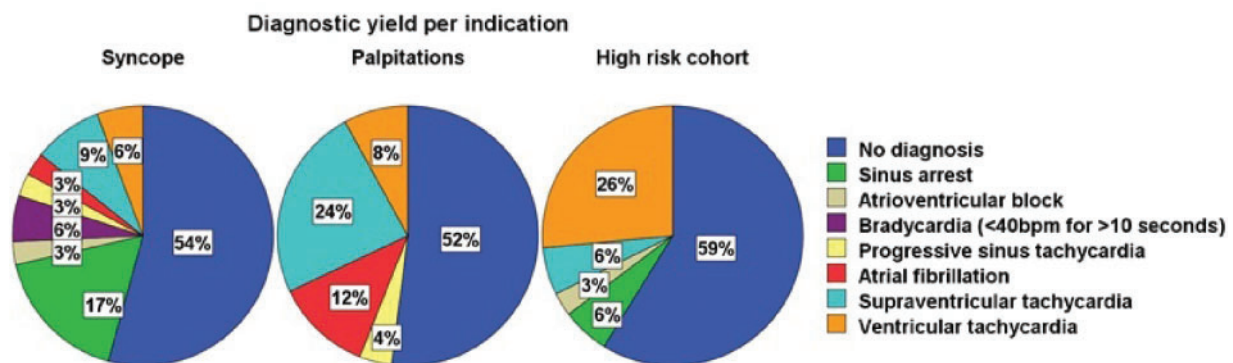
Clinical significance of the incidental detection of non-sustained ventricular tachycardia with remote monitoring of the pacemaker

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Background:

Asymptomatic non-sustained ventricular tachycardia (NSVT) is often incidentally detected by the diagnostic function of modern pacemakers (PM).

NSVT prognostic role has already been studied in patients with implantable cardioverter-defibrillators, who are often affected by structural heart disease, but it is still unknown in the more heterogeneous and older population of PM patients.



Abstract P1632 Figure.

Purpose: To evaluate the prevalence of NSVT in PM patients, to compare the clinical characteristics of patients with and without NSVT and to assess the prognostic role of NSVT in terms of total mortality, cardiovascular mortality and cardiovascular hospitalizations.

Methods: We retrospectively included consecutive patients followed with PM remote monitoring from September 2010 to December 2015. During the first 12-15 months of remote monitoring, the first three transmissions were analyzed and the patients were divided in two groups: group A) included patients presenting NSVT, group B) patients without NSVT. The two groups were compared in terms of age, sex, prevalence of ischemic and non-ischemic heart disease, non-cardiac comorbidities and in terms of total mortality, cardiovascular mortality and cardiovascular hospitalizations on the basis of the administrative data provided by the regional administration of the national health system.

Results: We enrolled 444 patients (mean age 76,2±10,9 yo, males 60,8%). At least one run of NSVT was recorded in 26,6% of patients (median length of the longest NSVT 148 cycles; median rate of the fastest NSVT 205 bpm). The two groups did not differ for age (p0,554), left ventricular ejection fraction (LVEF) (60,6±10,4% vs 60,7±10,0%; p0,910) nor for prevalence of hypertension (p0,112), diabetes mellitus (p0,324), hypercholesterolemia (p0,205), chronic renal failure (p0,269), ischemic cardiomyopathy (p0,213), atrial fibrillation (p0,078), hyperthyroidism (p0,190), cancer (p0,512). Conversely, patients with NSVT had more frequently atrioventricular conduction disorders (76,3 vs 54,6%; p<0,001) with higher percentage of ventricular pacing (71±41 vs 54±45%; p<0,001), history of heart failure (20,3 vs 12,3%; p0,025) and valvular heart disease (29,7 vs 18,4%; p0,003). At baseline patients with NSVT were more treated with beta-blockers (47,7 vs 34,8%; p0,013) but less treated with sotalolol (9,3 vs 16,9%; p0,039) and amiodarone (0,9 vs 8,1%; p0,004). Median length of follow up (FU) was 51,0 months (IR 34,2). Data on FU is currently being analyzed.

Conclusion: In this large series, patients with NSVT detected incidentally with PM remote control are more frequently affected by heart failure and valvular heart disease, without significant differences in LVEF. However, differences in chronic antiarrhythmic therapy usage and ventricular pacing percentage may partially justify these data. The real clinical significance of NSVT could be better explained by the forthcoming analysis of mortality and hospitalizations.

P1635

Early detection and anticoagulant therapy for atrial fibrillation guided by remote monitoring systems of cardiac implantable electrical devices

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Standard operating procedure (SOP) was effective for management of heart failure by utilizing remote monitoring (RM) of CIEDs. The impact of RM of CIEDs on early detection of atrial fibrillation (AF) was evaluated in SOP for the prevention of cardioembolic stroke.

Methods and results: Initial episode of AF was detected and managed by SOP (Figure) in 644 patients after implantation of CIEDs during follow-up periods from Jan 2012 to Nov 2016. Three hundreds and thirty CIEDs were monitored remotely from RM-patients and 314 CIEDs in control-patients were interrogated in outpatient device clinic. First episode of AF(≥1hr) was recorded in 18 patients (75±15yo, 14male, 12RM-group, CHADS2 score;1,6±0,8) at 831±690 days after implantation of pacemaker(n=15), CRTP(n=1), CRTD(n=1), and ICD(n=1). Initial AF-episodes(≥1hr) was detected significantly earlier in 12 RM-patients (26±45days after the onset) compared to 6 control-patients (113±56days)(p=0,013). Anticoagulant drugs were administered 9 out of 10 RM-patients with CHADS2≥1 and 3 out of 6 control-patients with CHADS2≥1. These interventions were started significantly faster for RM-patients (48±60days) than control-patients (113±56days)(p=0,04). At periodical clinical visits, AF(>6mins) was detected in 12 patients. Anticoagulant therapy was administered in 7 out of 10 patients with CHADS2≥1. Finally, anticoagulant therapy was started in 16 patients with AF(>6mins) and CHADS2≥1 based on SOP. During the follow-up periods, no patients were suffered from cardioembolic stroke and major bleeding complication.

Conclusion: RM of CIEDs may be effective for the early detection of AF for the prevention of cardioembolic stroke.

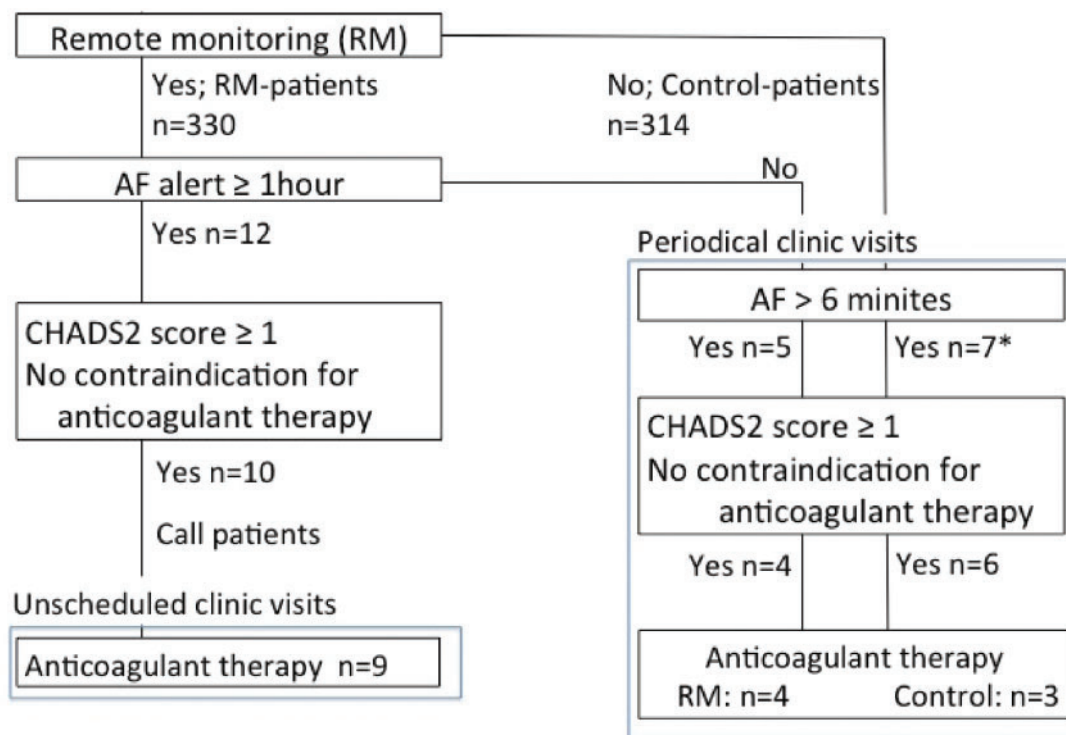
P1636

Incidence and predictors of atrial arrhythmias in patients with a dual chamber implantable cardioverter-defibrillator followed by remote monitoring

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Background: Patients with dual chamber implantable cardioverter-defibrillator (DR-ICD) are at risk of developing atrial arrhythmias because of the increased rate of ventricular pacing or the progression of heart failure. Atrial arrhythmia burden (AB) can be monitored continuously by Remote Monitoring (RM) in order to detect early changes associated with patient risks, and optimize medical therapy.



* In 6 control-patients AF sustained > 1hr

Abstract P1635 Figure. SOP for management of new onset of AF.