Ajmaline testing for early detection of Arrhythmogenic Cardiomyopathy (ACM)

No registrations found.

Ethical review	Not applicable
Status	Other
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON29255

Source
Nationaal Trial Register

Health condition

Arrhythmogenic cardiomyopathy, ARVC, carriers of pathogenic PLN and PKP2 mutations

Sponsors and support

Primary sponsor: UMC Utrecht
Source(s) of monetary or material Support: Hartstichting, e-DETECT consortium

Intervention

Outcome measures

Primary outcome

Mean changes in Activation Time Duration before and during ajmaline administration between the subtricuspid area and LV/RV/RVOT as calculated by ECG imaging.

Secondary outcome

Ventricular tachycardia, sudden cardiac death, ventricular fibrillation or development of arrhythmogenic cardiomyopathy (fulfilment of the Task Force Criteria) during follow up.

Electrocardiographic parameters (PQ, QRS and QTc intervals, the occurrence of the type I Brugada pattern, terminal activation duration) before, during and directly after ajmaline provocation.

Adverse events of ajmaline provocation

Study description

Background summary

Rationale: Arrhythmogenic Cardiomyopathy (ACM) is a disease with a genetic origin and involves cardiac desmosomes dysfunction and fibrofatty replacement of the myocardium. Clinically, patients present with ventricular arrhythmias or sudden cardiac death. Genetic testing in family members of patients with ACM shows incomplete penetrance of the disease. Earlier studies have shown that the electromechanical interval and RV deformation imaging is abnormal in the subtricuspid area of the right ventricle (RV) even in the early stage of disease. We hypothesize that ajmaline induces more pronounced electrical and mechanical dysfunction of those myocardial areas that are affected in the early stage of ACM. Therefore, this ajmaline provocation could identify those mutation carriers who are at risk for the development of ACM, arrhythmias and/or sudden cardiac death.

Objective: Describe the electrocardiographic changes and areas of late myocardial activation using electrocardiographic imaging in PLN and PKP2 mutation carriers during ajmaline provocation.

Study design: Multicentre, diagnostic trial, cohort study

Study population: All patients who are diagnosed with ACM due to an PLN and PKP2 mutation and their asymptomatic family members who are PKP2 and PLN mutation carriers known in the UMC Utrecht, UMC Groningen and Amsterdam Medical Centre. Patients with structural normal hearts (determined by echocardiography or cardiac MRI) who are referred for ajmaline provocation to exclude Brugada syndrome.

Intervention: ajmaline (class 1c sodium channel blocker, with a short half-life) infusion in fractions of 10mg every minute up to a target dose of 1mg/kg.

Main study parameters/endpoints: difference in mean activation time duration (ATD) of the subtricuspid area before and after ajmaline provocation using electrocardiographic imaging (ECGI).

Study objective

Ajmaline induces more pronounced electrical and mechanical dysfunction of those myocardial areas that are affected in the early stage of ACM. Therefore, this ajmaline provocation and electrocardiographic imaging could identify those mutation carriers who are at risk for the development of ACM, arrhythmias and/or sudden cardiac death.

Study design

T0 selection

T1 ajmaline provocation

T2 bloedtest liver parameters

T3 Regular follow up

Intervention

Ajmaline provocation

Contacts

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Eligibility criteria

Inclusion criteria

Patients or asymptomatic carriers of pathogenic PLN mutation, pathogenic PKP2 mutation or patients without structural heart disease who are referred for ajmaline provocation to exclude Brugada syndrome.

New York Heart Association functional class ¡Ü 1.

Exclusion criteria

Severe hepatic impairment (Child-Pugh class C)

Severe renal dysfunction (eGFR <30 ml/min/kg)

Symptomatic heart failure, NYHA ¡Ý 2

Women who are currently pregnant

Known intolerance or contraindication to Ajmaline

Sick sinus syndrome, second or third degree AV block without pacemaker implantation

Recent myocardial infarction

Known strong allergic reaction to ECG electrodes

Study design

Design

Study type:	Interventional
Intervention model:	Other
Allocation:	Non-randomized controlled trial

Control: Active

Recruitment

NL

Recruitment status:	Other
Start date (anticipated):	01-06-2018
Enrollment:	65
Type:	Unknown

Ethics review

Not applicable

Application type:	Not applicable

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL6861
NTR-old	NTR7039
Other	EudraCT: 2018-000752-18 : METC nummer: 17-924, ABR nummer: 65196

Study results