ISRCTN55643149 https://doi.org/10.1186/ISRCTN55643149

Scleroderma heart study

Submission date
09/11/2016

Recruitment status
No longer recruiting

Registration date
09/03/2017

Overall study status
Completed

Last Edited
31/01/2022

Condition category
Circulatory System

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Scleroderma is a rare disease affecting a few thousand patients in the UK. The cause is not known. Patients develop fibrosis (a kind of scar tissue) in the skin, making it tight and hard. Internal organs are often affected too, including the lungs, kidney and bowel. Scleroderma can affect the heart, which can be mild or severe and devastating. Because this complication is uncommon, little is known about how best to diagnose and treat this condition. Current practice is to use MRI scans and sometimes to take samples (biopsies) of the heart to make a diagnosis of scleroderma heart involvement. Treatment is often with drugs to suppress the immune system. However, it is not known how much inflammation (swelling) there is in the heart in patients with scleroderma or whether the treatment might work to suppress that inflammation. In this study, a type of scan called a PET-CT scan will be performed on patients who we suspect have heart involvement from their scleroderma. This scan is already widely used in patients with cancer and in some other conditions. It involves the injection into a regular vein of sugar with a tracer attached to it, so the scan can track where the sugar is taken up. The aim of this study is to find out if a PET-CT scan is an effective assessment to use in patients thought to have heart involvement from scleroderma.

Who can participate?
Adults who have scleroderma with suspected heart involvement.

What does the study involve?
All patients are recruited at the Scleroderma centre and National Pulmonary Hypertension Service at the Royal Free Hospital. After signing an informed consent form, participants undergo a heart assessment to check that they are suitable to take part. Following this, health information is taken and patients undergo a PET-CT scan and a pregnancy test (if female of child bearing potential). A follow up visit, involving similar assessments is carried out 6-9 months after screening if required.

What are the possible benefits and risks of participating?
There are no direct benefits involved with participating. The main risk involved in this study will be the radiation dose received by patients. All patients included in this study will undergo a single 18FDG PET-CT scan. Patients with a positive scan may be offered one further scan after a course of treatment. The study protocol has been written in consultation with medical physics expert at the Royal Free who has reviewed and approved radiation doses. Additionally in order

to avoid harm to unborn children, patients of child bearing potential will have a pregnancy test at every trial visit. If the test is positive patients will be withdrawn from the study immediately.

Where is the study run from?
Royal Free Hospital (UK)

When is the study starting and how long is it expected to run for?
March 2015 to December 2020

Who is funding the study?
Royal Free Charity (UK)

Who is the main contact?
1. Ms Ivy Wanjiku (public)
ivy.wanjiku@nhs.net
2. Dr Benjamin Schreiber (scientific)
benjamin.schreiber@nhs.net

Contact information

Type(s)
Public

Contact name
Ms Ivy Wanjiku

Contact details
Clinical Trials
Rheumatology Department
Lower Ground Floor
Royal Free London NHS Foundation Trust
London
United Kingdom
NW3 2QG
+44 20 7317 7544
ivy.wanjiku@nhs.net

Type(s)
Scientific

Contact name
Dr Benjamin Schreiber

Contact details
Clinical Trials
Rheumatology Department
Lower Ground Floor
Royal Free London NHS Foundation Trust
London
United Kingdom
NW3 2QG

+44 20 7317 7544
benjamin.schreiber@nhs.net

Additional identifiers

Protocol serial number
9729

Study information

Scientific Title
A study of using 18FDG-PET to define presence of inflammation in scleroderma myocardial involvement

Study objectives
Use of a combined 18FDG-PET-CT scan may aid in assessment of patients thought to have cardiac involvement from scleroderma.

Ethics approval required
Old ethics approval format

Ethics approval(s)
East Midlands - Derby Research Ethics Committee, 30/08/2016, ref: 16/EM/0292

Primary study design
Observational

Study design
Observational cross-sectional study

Study type(s)
Diagnostic

Health condition(s) or problem(s) studied
Systemic sclerosis with heart involvement

Interventions
All patients will be recruited at the Scleroderma centre and National Pulmonary Hypertension Service at the Royal Free Hospital.

Pre-treatment Evaluation
Patients with suspected scleroderma cardiac involvement are followed up at the Scleroderma and Pulmonary Hypertension services at the Royal Free Hospital as part of standard practice, where a full 'Cardiac Evaluation' is undertaken; follow up visits are approximately 1-6 monthly depending on the clinical scenario. The Cardiac Evaluation includes rheumatic and cardiac history and examination, blood tests including autoantibodies, CK level, and cardiac biomarkers (troponin, NTproBNP), six minute walking distance, ECG, echocardiogram, 24 hour holter, an implantable loop heart rhythm recorder device in selected patients (those with ectopic beats on holter, presyncope or palpitations), cardiac MRI and cardiac catheterisation with assessment of coronary artery disease if not already excluded and right heart catheterisation as indicated.

Patients with scleroderma cardiac involvement will often undergo cardiac biopsy -with samples sent for histology and to exclude viral myocarditis.

This standard rheumatic and cardiac assessment will form the baseline evaluation for patients included in this study. Any UK patient with a diagnosis of scleroderma with cardiac involvement who has undergone a cardiac evaluation at the Royal Free Hospital is potentially eligible for entry into the trial. The patient will be consented for the trial by an appropriately trained member of the Scleroderma and Pulmonary Hypertension services at the Royal Free Hospital. When patients are seen at the Scleroderma and Pulmonary Hypertension services at the Royal Free Hospital, they will be given the patient information sheet. All patients will be allowed as much time as needed to review the information sheet and ask any questions to the Scleroderma and Pulmonary Hypertension services team.

After completion of the informed consent form, a trial number will be assigned to each the patient. Following registration, Scleroderma and Pulmonary Hypertension services at the Royal Free Hospital will contact the nuclear medicine department to arrange a trial slot of imaging. The nuclear medicine department will undertake trial imaging within 6 weeks of the initial evaluation and consent
procedures. If there is a ≥ 6 week delay before the imaging can be undertaken, patient has to be withdrawn from the trial. Such a patient would be eligible to be screened again and considered for inclusion if he/she fulfils the eligibility criteria. Once a patient has been registered onto the trial, the patient will be provided with a copy of their signed consent form.

Intervention Type
Procedure/Surgery

Primary outcome(s)
1. Uptake of 18FDG-PET-CT in the heart in patients with known cardiac scleroderma is assessed by PET-CT scanning at baseline and 6-9 months
2. Degree and pattern of uptake with echocardiography, cardiac markers, cardiac MRI
3. Prognosis in patients with “active” disease on 18FDG-PET-CT to those with “inactive” disease

Key secondary outcome(s)
1. Degree and pattern of uptake with echocardiography, cardiac markers and cardiac biopsy findings
2. Level of uptake of 18FDG-PET in other organs known to be involved by scleroderma
3. Change in cardiac 18FDG-PET-CT in patients with “active” disease after completion of therapy
4. 18FDG-PET uptake in the lungs with dedicated pulmonary CT imaging (where available)

Completion date
01/12/2020

Eligibility

Key inclusion criteria
1. Patients with Scleroderma
2. Age 18 or older
3. Satisfied the ACR diagnostic criteria for scleroderma (also known as systemic sclerosis)
4. Suspicion of cardiac involvement from scleroderma with one of:
4.1. Left ventricular ejection fraction < 40% on echocardiogram
4.2. Abnormal heart muscle on cardiac MRI suggestive of scleroderma involvement

4.3. Diastolic heart failure in a patient without known risk factors (must satisfy: age <50, no known systemic hypertension, no diabetes mellitus, pulmonary arterial wedge pressure >15 mmHg on right heart catheterisation at rest)
4.4. Persistently raised troponin (> 2 times upper limit of normal on two occasions at least 28 days apart) without coronary artery disease
4.5. Ventricular arrythmias
5. No coronary artery disease. This needs to be excluded by CT
6. No coronary artery disease (needs to be excluded by CT coronary angiogram, myocardial perfusion scanning, dobutamine stress echocardiogram or conventional coronary angiography)
7. Able to give informed consent

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 Years

Sex
All

Key exclusion criteria
1. Inability to lie flat
2. Pregnancy or breastfeeding
3. Unwilling to undergo pregnancy test prior to study (in women of child bearing potential)
4. Coronary artery disease. This needs to be excluded by CT coronary angiogram, myocardial perfusion scanning, dobutamine stress echocardiogram or conventional coronary angiogram
5. Inclusion in a clinical trial involving an investigational medical product in the last 28 days

Date of first enrolment
01/08/2016

Date of final enrolment
01/07/2020

Locations

Countries of recruitment
United Kingdom

England

Study participating centre

Royal Free Hospital
Clinical Trials
Rheumatology Department
Lower Ground Floor
London
United Kingdom
NW3 2QG

Sponsor information

Organisation
Royal Free London NHSFoundation Trust

ROR
https://ror.org/04rtdp853

Funder(s)

Funder type
Charity

Funder Name
Royal Free Charity

Results and Publications

Individual participant data (IPD) sharing plan
Data generated from the study will be analysed and stored by Dr Benjamin Schreiber for up to 10 years as it may be important for future or follow up extension data.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
HRA research summary			28/06/2023	No	No