



Project Summary

Non-Invasive Parameters of Pulmonary Hypertension in Scleroderma

Dr Jennifer Rossdale - £11500.00

Systemic Sclerosis is a rare, chronic autoimmune condition which causes hardening of the skin and can also affect the internal organs and blood vessels. Pulmonary Hypertension (high blood pressure in the blood vessels that carry blood to your lungs) is a common and sadly frequently fatal complication of Systemic Sclerosis.

It is important for doctors to be able to test for early signs of Pulmonary Hypertension in patients with Systemic Sclerosis, because there are potentially life-extending treatments available. The sooner these treatments are started, the better they work.

Patients with Systemic Sclerosis are therefore screened regularly for Pulmonary Hypertension. However the current methods available are imperfect. The initial screening tests (echocardiograms, clinical examination and blood tests) often underplay or overstate an individual's risk of having Pulmonary Hypertension. The definitive diagnostic test (Right Heart Catheterisation) is an invasive test which carries its own risks and is often poorly tolerated by patients.

We therefore propose to identify early, non-invasive indicators of Pulmonary Hypertension in people with Systemic Sclerosis. We hope to find methods of detecting or excluding Pulmonary Hypertension earlier, and to reduce the number of invasive Right Heart Catheterisations which they are required to undergo.

We hope to identify blood tests which can be used as markers of inflammation and damage to blood vessels. If we are successful then this may allow the presence of Pulmonary Hypertension, or the risk of developing it, to be identified by a simple blood test.

We also propose to improve and expand the heart scans which patients undergo, in order to gain better information from them. We will also examine the small blood vessels in patients' fingernails and nailbeds, to see if these can give us useful information about any damage to the blood vessels in their lungs.

The reason why pulmonary hypertension develops in people with Systemic Sclerosis is still not clearly understood, and we hope through our study to add to the current understanding of the nature and role of the bodies' inflammatory processes in the damage and remodelling which takes place in the lungs' blood vessels.

Developing better tests for Pulmonary Hypertension in Systemic Sclerosis will improve our ability to detect this life-threatening condition, and to start potentially life-extending therapies sooner.