

Salford Royal Hospital is a large referral centre for patients with systemic sclerosis (scleroderma) and also for patients with complex nutritional problems. In addition, Salford Royal is academically linked to the University of Manchester. This arrangement has enabled the Rheumatology and Gastroenterology Departments to work together to study nutritional and gastrointestinal problems in patients with systemic sclerosis.

Approximately 90% of patients with systemic sclerosis develop problems related to their oesophagus, stomach or bowels (gastrointestinal tract). When severe, these may lead to weight loss. Some patients develop such severe problems that they require long-term intravenous feeding in order to meet their nutritional needs. Despite this, little is known about why some patients develop more severe nutritional problems or why some patients have more severe gastrointestinal symptoms.

Current projects, kindly supported by the Raynaud's and Scleroderma Association, are being undertaken by Dr Harrison, a Gastroenterology trainee, Dr Lal and Professor McLaughlin, Gastroenterology consultants and Professor Herrick, a Rheumatology consultant. These projects are outlined below:

Our first study reviewed the use of home intravenous feeding. We found that over a 22 year period, 25 patients with systemic sclerosis commenced home intravenous feeding under the supervision of Salford Royal. All of these patients had significant gastrointestinal problems and many had previously failed to tolerate tube feeding directly into their stomach or small bowel. We found that home intravenous feeding was relatively safe when used by patients with systemic sclerosis. However, most patients needed help, from a nurse or their family, to connect and disconnect their feed. Therefore, we were able to conclude that home intravenous feeding is a safe option for patients, with severe gastrointestinal problems, who are unable to consume sufficient food to maintain their weight.

Our second study, which is ongoing, aims to identify the proportion of all patients with systemic sclerosis who have nutritional problems, and to look for features associated with the development of these nutritional problems. This study involves the assessment of each patient's disease status, gastrointestinal symptoms and nutritional status. To-date, 170 patients have been recruited and are currently being followed up. Provisional results show that, when using an approved scoring tool for nutritional risk, 12% of patients would be considered to be at high risk of malnutrition and 14% at medium risk. A more detailed analysis of these patients' characteristics is currently ongoing and will

allow the identification of any features more likely to be present in patients with a low weight or weight loss.

Our third study aims to investigate the relationships between stomach related symptoms, the speed at which the stomach empties, feelings of fullness and problems in the involuntary (autonomic) nervous system. This study started in January 2014.

We are very grateful to everyone who has kindly given their time to participate in our research.