

## Project Summaries for 2001

**Dr H Burnett - Hope Hospital, Manchester**

**Grant awarded £10,800 (9 months)**

***Magnetic Resonance Imaging of the terminal ileum using the TrueFISP sequence (True Fast Imaging with Steady Precession-2 weighted gradient echo), findings compared to small bowel enema (SBE).***

We are attempting to develop a new and safer method of diagnosing Crohn's disease. Magnetic Resonance Imaging (MRI) is a scanning technique that uses a magnetic field to produce images. This means that it uses no X-rays and it is very safe. Until recently it was not possible to scan the bowel because it moves continuously. This results in blurred images, which are of little use to doctors. However, advances in the technology mean we can now perform scans in a single breath-hold (approximate 18 seconds). Because it is a relatively new technique it needs further research to decide if it is as good as the procedures currently offered, such as a Barium test. At the moment the best test to diagnose Crohn's disease (called a "small bowel enema") involves placement of a tube through the nose or mouth, down the gullet and into the first part of the small bowel. Patients commonly find this uncomfortable. In addition the small bowel enema gives as much radiation as approximately 60-80 chest X-rays.

The research study will last about 8 months and around 50 patients will be invited to join. Patients who are referred for a small bowel enema will be asked if they would like to also undergo the MRI examination. If they agree to take part they will be given a general information sheet describing MR scanning. The leaflet contains a series of questions that check that it is safe to go into a magnetic field; this is a routine procedure.

The patient will first be asked to drink 5-6 cups of a liquid that is designed to show up the bowel on the MR scans. The department uses this routinely and it has been tested to make sure it has a reasonable taste. The drink will take approximately 1-2 hours to travel through the small bowel. The patient will then undergo the magnetic Resonance scan. He or she will lie on their back on the scan table with a wide band resting over the top of the abdomen. This band collects the pictures for the scan. The scan itself should take approximately 30 minutes. This means the overall time should not last more than 3 hours.

The contrast agent has no side effects but can make some people feel bloated similar to the feeling after the barium test that is used currently. Around 3% of people who are claustrophobic find having an MR scan difficult. This will be discussed prior to the scan and it will be made clear that there will be no compulsion to undergo the scan. The scan can be stopped at the patient's request at any time.

It is hoped the results of this study will show MR scanning to be a useful method of looking at the small bowel. It has the sizeable benefit that no X-ray radiation is used. Patients with Crohn's disease frequently undergo multiple investigations over the years and any reduction in the number of X-ray examinations they undergo will be a substantial advance.