

An assessment of the natural progression of drug associated changes in liver fat levels following completion of chemotherapy for deposits of cancer in the liver which have spread from the large bowel

Submission date 28/04/2016	Recruitment status No longer recruiting	☐ Prospectively registered ☐ Protocol
Registration date 01/07/2016	Overall study status Completed	☐ Statistical analysis plan ☐ Results
Last Edited 13/03/2020	Condition category Digestive System	☐ Individual participant data ☐ Record updated in last year

Plain English summary of protocol

Background & Aims

The presence of liver fat with or without inflammation is an independent risk factor for disease and death (mortality and morbidity) following the removal (resection) of colorectal liver metastases (bowel cancer tumours that have spread to the liver). High levels of fat in the liver can be linked with obesity (being very overweight) and insulin resistance or it may be caused through neoadjuvant chemotherapy (chemotherapy before surgery). Dietary programmes (interventions) have been proposed for patients that are not receiving chemotherapy and have an excess of liver fat, but it is not known if similar interventions would benefit patients with chemotherapy induced fatty changes (fatty changes caused by chemotherapy). This is because it is not known to what extent this naturally resolves after chemotherapy has been completed in the conventional 4-6 week period between chemotherapy and surgery (washout period). This study looks to investigate changes in liver fat levels within this washout period after chemotherapy.

Who can participate?

Anybody over the age of 18 years old who has or will receive chemotherapy before surgery to remove colorectal liver metastases.

What does the study involve?

Each participant is asked to attend Royal Blackburn Hospital on 2 occasions. The first visit takes place around the time that the participant completes their course of chemotherapy. During this first visit a blood sample is taken to assess liver function, circulating blood fat levels and sugar level control. An indocyanine green clearance test is performed which is a newer more sensitive test of liver function than older blood tests. The participant also has a short chemical shift magnetic resonance scan. On the second visit, 4-5 weeks later, these investigations are performed again.

What are the possible benefits?

There are no perceived benefits to participants. Travel expenses will be reimbursed to alleviate any financial burden.

When is the study starting?

October 2015 to August 2017

Who is funding the study?

Rosemere Cancer Foundation (UK)

Where is the study running?

East Lancashire Hospitals NHS Trust, Blackburn (UK)

Who is the main contact?

1. Mr Daren Subar (scientific) daren.subar@elht.nhs.uk

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Contact information

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Additional identifiers

Protocol serial number

Study Protocol v2.0

Study information

Scientific Title

An assessment of the natural progression of iatrogenic changes in intra-hepatic fat levels following cessation of neoadjuvant chemotherapy for colorectal liver metastases

Acronym

LiverPRIMEii

Study objectives

Iatrogenic increases in intra-hepatic fat levels remain static following cessation of neoadjuvant chemotherapy before hepatic resection of colorectal liver metastases.

Ethics approval required

Old ethics approval format

Ethics approval(s)

North West – Preston Research Ethics Committee, 11/05/2016, ref: 16/NW/0416

Primary study design

Observational

Study design

Observational cohort study

Study type(s)

Diagnostic

Health condition(s) or problem(s) studied

Hepatic steatosis/intra-hepatic fat in patients with colorectal liver metastases who are undergoing neoadjuvant chemotherapy

Interventions

30 patients in receipt of neoadjuvant chemotherapy for metachronous colorectal liver metastases will be asked to attend Royal Blackburn Hospital on 2 occasions.

During first visit, at cessation of neoadjuvant chemotherapy, participants will undergo chemical shift magnetic resonance scan, indocyanine green clearance test, serum liver function tests, serum markers of glycaemic control and lipid profile.

These investigations will be repeated 4-5 weeks later in the immediate pre-operative period.

Statistical analysis will be carried out to test for significant differences in quantification of intra-hepatic fat.

Intervention Type

Procedure/Surgery

Primary outcome(s)

Intrahepatic fat fraction as measured by 2 Chemical Shift Magnetic Resonance scans greater than 24 hours apart.

Key secondary outcome(s)

1. Indocyanine Green Plasma Disappearance Rate and Retention at 15 minutes, measured using a PULSION Indocyanine Green Clearance Testing Device. This will be measured at visit 1 (Week 0 - at cessation of chemotherapy) and 4 weeks later (pre-operatively)
2. BMI, Height, Weight and Hip to Waist ratio, measured at visit 1 (Week 0 - at cessation of chemotherapy) and 4 weeks later (pre-operatively)
3. Assessment of Liver function, Glycaemic control and Lipid profile, including Bilirubin, AST, ALT, ALP GGT, HbA1c, Random Glucose, Triglycerides and Cholesterol at visit 1 and 2

Completion date

08/08/2017

Eligibility**Key inclusion criteria**

1. Patients must be able to receive and understand verbal and written information regarding the study and give written, informed consent.
2. Patients in receipt of neoadjuvant chemotherapy for CRLM.
3. Persons over 18 years old

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 Years

Sex

All

Key exclusion criteria

1. Persons under 18 years of age.
2. Conditions in which the supine position and breath holds required for MR scanning are not possible.
3. Persons who might not adequately understand verbal explanations or written information given in English, or who have special communication needs.
4. Persons with contraindications to MR imaging- presence of cardiac pacemaker/artificial heart valve/aneurysm clips/metallic fragments in eyes/cochlear implants

5. Pre-existing chronic liver pathology such as haemachromatosis, viral hepatitis or primary hepatic malignancy.

Date of first enrolment

01/06/2016

Date of final enrolment

01/07/2016

Locations

Countries of recruitment

United Kingdom

England

Study participating centre

East Lancashire Hospitals NHS Trust

Royal Blackburn Hospital

Haslingden Road

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Sponsor information

Organisation

East Lancashire Hospitals NHS Trust

ROR

<https://ror.org/002pa9318>

Funder(s)

Funder type

Charity

Funder Name

Rosemere Cancer Foundation

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from research@elht.nhs.uk

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