ISRCTN37721571 https://doi.org/10.1186/ISRCTN37721571

Wnt signalling in colon cancer

Submission date 08/10/2010	**Recruitment status** No longer recruiting	[_] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 24/02/2011	**Overall study status** Completed	
Last Edited 18/12/2017	**Condition category** Cancer	

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
9016

Study information

Scientific Title
Is the tumour suppressor adenomatous polyposis coli (APC) crucial to iron mediated colorectal carcinogenesis? A single centre observational clinical laboratory study

Study objectives
Hypothesis and proof of concept:
Our hypothesis is that increase in cellular iron import proteins (TfR1, DMT1) occur early in the

adenoma-carcinoma sequence through mutations in APC and lead to cellular iron loading. As demonstrated in our previous work the effects of this iron loading is to mediate increased Wnt signalling resulting in c-myc induction. This in turn serves to increase the expression of iron import proteins (TfR1, DMT1) and decrease the expression of iron export (ferroportin [FPN]) and storage (ferritin) proteins. Such a hypothesis explains how Wnt signalling controls iron metabolism and ensures that there is adequate cellular iron for ATP generation and cellular proliferation.

Experimental design:
To test such a hypothesis we aim to prospectively collect the following colorectal tissue from patients attending for colonoscopy:
1. Normal colonic mucosa in patients with no colorectal pathology (n = 30)
2. Polyps and matched normal colon (n = 30)
3. Colorectal cancers and matched normal colon (n = 30)

We also intend to collect serum and urine from the following patient groups:
4. Normal colonoscopy (n = 30)
5. Colorectal adenomas (n = 30)
6. Colorectal cancers (n = 30)

Ethics approval required
Old ethics approval format

Ethics approval(s)
Black Country Research Ethics Committee, 03/08/2010, ref: 10/H1202/40

Study design
Single-centre non-randomised observational clinical laboratory study

Primary study design
Observational

Study type(s)
Screening

Health condition(s) or problem(s) studied
Topic: National Cancer Research Network; Subtopic: Colorectal Cancer; Disease: Colon

Interventions
This will include the collection of tissue from normal colonic tissue, adenomatous polyps and colorectal cancers. Alongside this we will collect serum and urine to measure systemic iron transport proteins. Following collection of tissue we will determine the expression of APC and the cellular iron transport proteins utilising techniques including, mass spectrometry, western blotting, Real-Time PCR and immunohistochemistry. In each group of patients (normal, polyps or colorectal cancer) we will determine the expression of the iron transport proteins and determine if there are significant changes demonstrable.

Follow Up Length: 12 month(s); Study Entry : Registration only

Intervention Type
Other

Phase
Not Applicable

Primary outcome(s)
Measured at baseline, using the expression of proteins in the tissue and serum to detect the cellular and systemic iron transport proteins. The techniques used will include mass spectrometry, western blotting, real time PCR and immunohistochemistry.

Key secondary outcome(s))
No secondary outcome measures

Completion date
01/12/2011

Eligibility

Key inclusion criteria
1. Aged between 60 - 75 years, either sex
2. Bowel cancer screening patients attending for colonoscopy

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Senior

Sex
All

Key exclusion criteria
1. Unfit for colonoscopy
2. Previous colorectal cancer
3. Ongoing or previous cancer treatment (chemo-radiotherapy)

Date of first enrolment
01/11/2010

Date of final enrolment
01/12/2011

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Royal Wolverhampton NHS Trust, New Cross Hospital
Wolverhampton
United Kingdom
WV10 0QP

Sponsor information

Organisation
New Cross Hospital (UK)

ROR
https://ror.org/05w3e4z48

Funder(s)

Funder type
Charity

Funder Name
Digestive Disorders Foundation (CORE) (UK)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	30/08/2012		Yes	No