Predicting bowel cancer in chronic Ulcerative Colitis

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Hypothesis
Aberrant methylation of Wnt genes in chronically inflamed mucosa in UC predates clinically detectable neoplasia and this can be exploited to stratify cancer risk.

Proposal
A nested matched case-controlled study will be performed using archived FFPE biopsies from a cohort of patients with UC who have been under surveillance for at least three episodes (6 - 8 years).

Reference

Can methylation markers prevent cancer progression in UC?

Research Aims
To determine the time course of methylation change relative to the clinical detection of neoplasia and investigate whether a supplementary methylation test can contribute to risk stratification in UC surveillance.

Pilot data looks promising!
Methylation analysis of a 73 year old female with chronic colitis

Figure: Pilot data shows increased levels of methylation seen in pre invasive and invasive cancer in chronic UC.