A New Biomarker for Inflammation in Inflammatory Bowel Disease

BACKGROUND

Inflammatory Bowel Diseases (IBD) are serious and chronic diseases of the gastrointestinal tract that affect 1 in 1000 people in the West. Commonly divided into ulcerative colitis and Crohn's disease, the spectrum of symptoms (bloody diarrhea, weight loss, malabsorption, and abdominal pain) the frequent need for surgery, further complications and the increased risk of colonic malignancies impose a significant impact on the health of affected patients. Despite scientific advances regarding the etiology and pathogenesis of these relapsing and remitting immune-mediated diseases over the last decade, a full understanding remains incomplete.

A key NICE recommended diagnostic – the calprotectin biomarker - established as a test to differentiate IBD from conditions with similar symptoms (e.g. Inflammatory Bowel Syndrome), although clinically useful, does not in practice give consistent results when used in isolation in certain circumstances. Due to a lack of definitive diagnostic information, physicians in secondary care often have no choice but to proceed with more invasive, unpleasant and costly diagnostic procedures such as colonoscopy.

Current therapies for IBD aim to ameliorate symptoms and inflammation, achieve remission and re-establish mucosal healing. However, the efficacy of treatment, drug tolerance, and the risk of unwanted and at times serious side effects is hugely variable among individuals. Thus, there is also an unmet need in the availability of suitable biomarkers which can enhance existing diagnostics and target appropriate therapies to appropriate patients, monitor disease and pre-empt flare-ups, and assess efficacy of therapeutic drugs.

THE TECHNOLOGY

- A novel biomarker for IBD
- Whilst the Calprotectin biomarker is the current gold standard biomarker, it does not give consistent results therefore it is not as helpful a biomarker as was first hoped.
- We propose that the balance of calprotectin along with our proprietary biomarker is the critical factor as to whether calprotectin is promoting inflammation.

BENEFITS

Key Benefits;

- Useful to predict those patients that will develop chronic inflammation
- A combination of our proprietary biomarker and Calprotectin could predict relapse in IBD patients, thereby improving management of IBD in patients.

Further Potential Benefits;

- Increase clinical knowledge in diagnosis of IBD
- Avoid invasive procedures
- Monitor effect of therapy (utility in clinical trials)
- Predict mucosal healing
- Stratify treatment.

APPLICATIONS

- The technology is being developed for diagnostic application, in ELISA or lateral flow test formats.
- Our ultimate goal is to develop a lateral flow-based diagnostic test for use at the point of care.

INTELLECTUAL PROPERTY

A patent application has been filed recently.

OPPORTUNITY

The technology will be of interest to biotechnology and pharmaceutical companies. We would like to collaborate with an industry partner for further preclinical and clinical investigations with a view to ultimately licensing the technology. Please see our video about this technology on our YouTube channel https://www.youtube.com/watch?v=UoOicp2YOss

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