Falk Foundation/Guts UK Awards 2025

F1/F2 RESEARCH AWARDS WINNER:
Dr Mohamed Tabib

Improving Faecal Calprotectin Testing Accuracy for Better Monitoring and Treatment of Inflammatory Bowel Disease

Dr Tabib is undertaking this research at the Department of Gastroenterology, NHS Tayside. He is a Foundation Year 1 Doctor currently rotating in General Medicine at Perth Royal Infirmary, NHS Tayside.

Dr Tabib explains:

'Inflammatory bowel disease (IBD) is a chronic relapsing-remitting disease characterised by intestinal inflammation and significant clinical variability. Effective disease monitoring remains a cornerstone of IBD management, enabling early identification of inflammation and timely intervention. Non-invasive biomarkers, particularly faecal calprotectin (FC), are increasingly relied upon to assess mucosal activity and guide clinical decision-making.

'FC is a calcium-binding protein primarily found in neutrophils. It is released during inflammation and is thought to be highly stable in stool samples for up to seven days, making it a reliable marker for assessing gastrointestinal inflammation. FC levels typically correlate with disease activity in patients with IBD and levels above 250 µg/g indicate active inflammation, while levels below this threshold typically suggest remission.

'Recent changes in how these stool samples are collected and processed within our Trust have led to concerns about the accuracy of the results. Studies have shown that FC may not be as stable as previously thought, with data suggesting that FC remains stable for approximately 3-5 days with some studies suggesting there may be significant drop off in levels in the first 24 to 48 hours. Nevertheless, there have been significant advancements in optimising the pre-analytical stability of FC using buffer solutions, controlled storage temperatures and other related interventions.

'This study, which is due to begin in June, will run for 12 months, aims to evaluate whether the BÜHLMANN CALEX® collection device offers superior reliability and accuracy in FC measurement compared to traditional plain stool pots. The project includes both a retrospective analysis of patient outcomes associated with historical FC data and a prospective arm involving approximately 20 IBD patients providing paired samples via both collection methods to assess the stability of FC.

'The findings from this study could enhance our ability to interpret these test results, leading to more precise monitoring of IBD. This could refine risk stratification, reduce unnecessary interventions and support more responsive, evidence-based management of IBD. Ultimately, the findings aim to inform best practices in FC testing, contributing to more consistent and clinically meaningful use of this biomarker.

'What draws me to this particular work is not only the science of inflammation, but the human reality of living with a chronic, unpredictable illness. Reliable disease monitoring tools can make a tangible difference in how we support patients; not just by preventing flare-ups, but by empowering them with clearer insights into their condition. I believe that innovation isn't just about developing new technologies; it's also about critically evaluating and enhancing the tools we already have. In a field where timely decisions can change clinical outcomes, optimising every aspect of investigation and treatment matters, I hope this project can contribute meaningfully to that ongoing effort.'

Dr Tabib's Project Supervisor Dr Craig Mowat, Senior Clinical Lecturer in Gastroenterology/Honorary Consultant, Ninewells Hospital and Medical School, Dundee NHS comments:

'I have known Mohamed since he was a junior medical student in Dundee when he attended our department for a four-week training session in January 2022, making a significant impression through his attitude, knowledge and enthusiasm for gastroenterology. Mohamed then joined our research group in his final year and made a significant contribution over a very short period and was awarded a prize for best oral student presentation at the Scottish Society of Gastroenterology summer meeting.

'Mohamed is currently working as an FY1 in our department and has carried his personal attributes into the workplace. He is a highly valued member of the team and we are keen to nurture his interest in academic gastroenterology.'

Dr Mohamed states:

'It is a true honour to receive the 2025 Dr. Falk/Guts UK F1/F2 Research Award and have the opportunity to collaborate with a prestigious charity and organisation. I would also like to thank my supervisors for their constant support, encouragement and advice that has helped me get this far. I hope this will be a fruitful step in the beginning of my academic career and will certainly serve as great motivation to pursue research opportunities in the future. I'm excited to continue developing my interest in IBD and colorectal cancer and to see where this path in research and clinical practice leads.'

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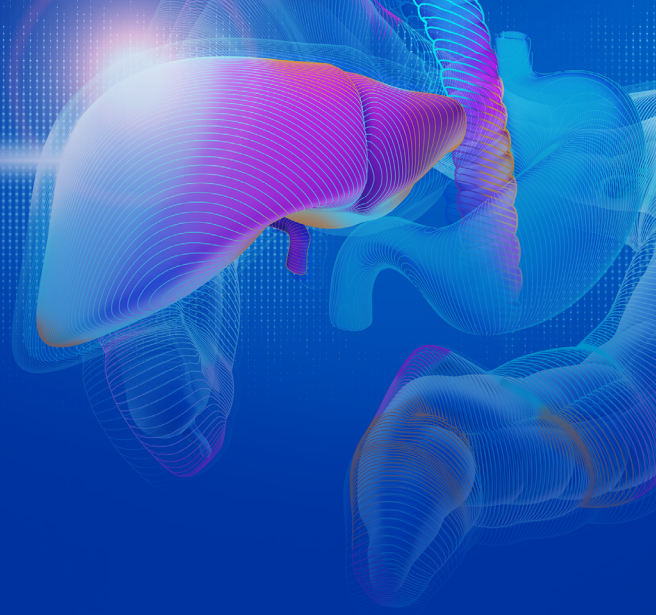

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