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## Dr Falk/Guts UK Awards 2024

### MEDICAL STUDENT PRIZE WINNER: **DR JEMIMA FINKEL**

**PROJECT:**  
**Bacterial Translocation in Cirrhosis and its Complications.**



*Dr Finkel is a research fellow working at the Royal Free Hospital and undertook this project as part of her MPhil and PhD at the Institute of Liver and Digestive Health at the Department of Medicine, University College London.*

**Dr Finkel explains:**

‘The Lancet has reported that deaths due to liver disease have increased by 12% in three years and are predicted to double within 20 years. In cirrhosis, there is an increased susceptibility to systemic infections and the mortality rate of sepsis in cirrhosis continues to rise, with reports as high as 67%. Once infection occurs, 30% of patients will die within one month, however in those surviving, a further 30% will die within one year. There is therefore an urgent need to improve these outcomes.

In my work I see patients with liver cirrhosis on a daily basis and I chose this project due to its direct clinical relevance to a population I treat, with the aim of potentially improving outcomes in these patients.

‘Bacterial translocation (BT) is a critical event in cirrhosis and is defined by the translocation of gut bacteria or bacterial products to the mesenteric lymph nodes. Even without overt infection, BT is associated with aggravation of peripheral vasodilatation and worsening of intrahepatic endothelial dysfunction and a deterioration of the clinical course.

‘The first part of my project therefore aims to explore bacterial translocation within this cohort of patients and to thus gain further understanding about potential therapies.

‘I will map out the pattern of bacterial translocation by testing samples from different blood vessels around the gut and the liver to detect any significant differences and will assess any correlation with longer-term outcomes. This investigation will involve a cohort of around thirty patients who are undergoing transjugular intrahepatic portosystemic shunts (TIPSS) for diuretic refractory ascites/ hepatic hydrothorax.

‘Non-selective beta-blockers (NSBBs) are the standard of care for

patients with cirrhosis and portal hypertension for primary and secondary prophylaxis of variceal bleeding, however, the benefits of beta-blockade have been hypothesized to be over and above the reduction of portal venous pressure and there is some evidence that beta-blockers might decrease the incidence of BT, permeability and infection in cirrhosis.

‘The second part of my project therefore, involves assessing the effect of non-selective beta-blockers on levels of bacterial translocation and using small bowel MRI to investigate if any differences are due to the changes in bowel motility. I will study twenty patients on beta-blockers and additionally assess bacterial translocation in ten patients undergoing TIPSS.

‘This will provide further insights on the mechanism of action of NSBBs and I hope will lead to further work including the design of larger trials, specifically looking at the effect of NSBBs in reducing infection in cirrhosis either alone (for primary prevention of infections) or in combination with antibiotics (for secondary prevention of infections).’

**Dr Finkel’s Project Supervisor Professor Emmanouil Tsochatzis, Professor of Hepatology and Honorary Consultant at University College Hospital, London comments:**

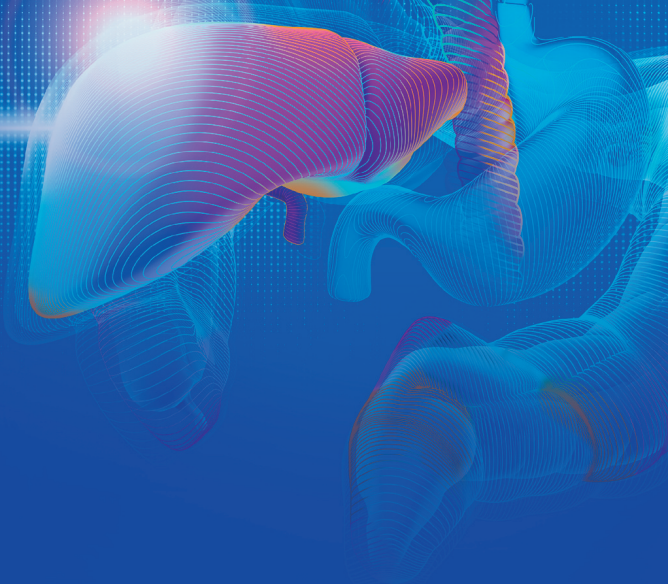
‘Dr Jemima Finkel is a very promising researcher whose PhD is investigating in depth bacterial translocation in cirrhosis. She is also aiming to understand if non-selective beta-blockers modify bacterial translocation and whether this is secondary to an increase in bowel motility. The results of her research might pave the way for a more liberal use of beta-blockers and result in important patient benefits.’

**Dr Finkel states:**

‘I am immensely grateful to the GUTs UK/ Dr Falk committee for honouring me with this award. My hope is that this work will have clinical relevance and a subsequent benefit to a wide cohort of patients and the recognition of this project endorses that. It provides me with personal motivation to continue to pursue an academic career in hepatology with the aim of conducting clinically applicable research that I can apply in my clinical care of patients.



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UI--2400153

Date of preparation: June 2024