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Dr Falk/Guts UK Awards 2024

MEDICAL STUDENT ESSAY PRIZE WINNER: DYLAN LEON



PROJECT:

Lower psoas muscle density, a proxy of sarcopenia, associates with 30 – day mortality in patients with acute variceal bleeding, independent of baseline liver function.

Mr Leon undertook this project whilst intercalating for an BSc in Gastroenterology and Hepatology, at the Department of Metabolism, Digestion and Reproduction at Imperial College London. Mr Leon will return to his medical degree final year studies in September at Imperial College London School of Medicine.

Mr Leon explains:

'My project focussed on the relationship between sarcopenia (loss of muscle mass and skeletal strength) and 30-day mortality in patients with acute variceal bleeding (AVB). The project appealed to me due to its clinical nature and potential application for prognosis. Further, as a fifth year student nearing the end of my medical school, I am interested in pursuing a career in gastroenterology so this was a chance to find out more about the speciality.'

'AVB is a life-threatening complication of cirrhosis. Gastrooesophageal varices are caused by portal hypertension, itself due to increased hepatic resistance from hepatic fibrosis. AVB can pre-dispose to infection, kidney injury and further hepatic decompensation.'

'Several factors have been indentified as predictors of AVB, whilst previous studies have linked sarcopenia to mortality in patients with cirrhosis, irrespective of their degree of portal hypertenation. Futher, whilst the prevalence of sarcopenia in patients with cirrhosis varies from 40% – 80% , the relationship between sarcopenia and AVB has not yet been explored. Therefore this study was conducted to assess whether sarcopenia, was associated with poorer outcomes in patients with AVB.'

'We developed a retrospective database of patients admitted with suspected AVB. We excluded patients without cirrhosis or evidence of an acute bleed. Of the 120 patients considered, 104 were included

in the study. We assessed lower psoas muscle density, identified radiographically from CT scans within 3-months of AVB, as a proxy of sarcopenia. This was then compared with patient mortality.'

'Our study demonstrated that lower psoas muscle units, a recognised measure of psoas muscle density and nutritional status, is associated with higher 30-day mortality post AVB independent of baseline liver disease severity.'

'However, there were some limitations to this study. It was small scale, the patient records may not have always been complete and the predominant aetiology of the liver disease was alcohol related, which is associated with a higher frequency of sarcopenia.'

'However, despite these limitations, we hypothesise that introducing the psoas score as a prognostic marker could potentially enable early identification of at risk patients. This could allow for early escalation to clinical investigation, or for patients with sarcopenia to receive more intense nutritional interventions, which could lead to improved patient outcomes.'

Mr Leon's Project Supervisor, Dr Luke Tyson, Honorary Research Fellow, Imperial College London and Consultant Hepatologist London North West University Hospitals comments:

Dylan's project identified psoas muscle density as a novel predictor of mortality in patients who have had a variceal bleed, independent to the severity of their liver dysfunction. Once validated, this will be useful in clinical practice as we will be able to identify patients who may benefit from intensive support post bleed.'

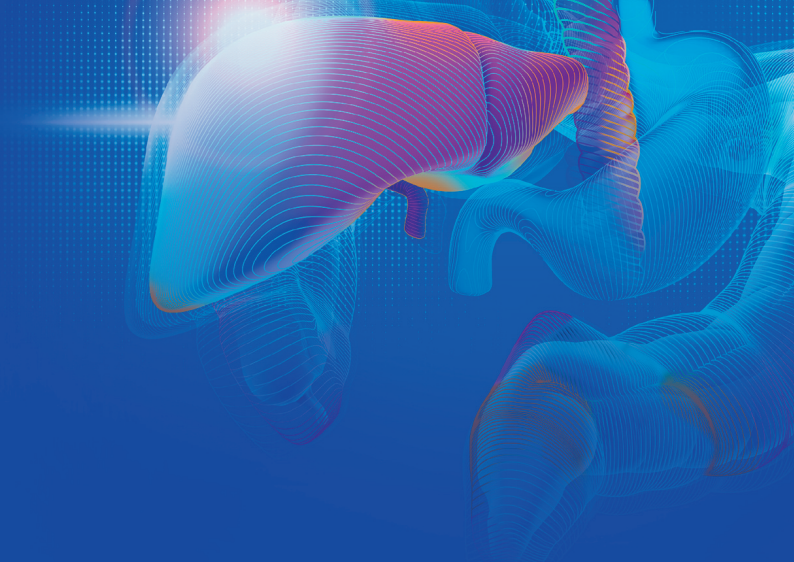
'I am delighted that Dylan has won the 2024 Dr Falk GUTs UK Medical Student Essay Prize. Dylan's hard work, initiative, and scientific acumen enabled this finding. He is a worthy winner.'

Mr Leon states:

'Winning the award has been amazing. Being rewarded for all the time and effort put into writing the essay has been a great feeling. Looking further down the line to my career, this award provides a significant addition to my portfolio and will set me apart from other candidates when applying for speciality training posts.'



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