Research tackles liver transplant failure

November 7 2013

The re-infection of transplanted livers with hepatitis C virus (HCV) – which can irreparably damage the new organ - could be halted by administering a drug which blocks the virus entering the liver, research from the University of Birmingham being presented at the Liver Meeting demonstrates.

People who receive a new liver to replace their own organ previously damaged by HCV infection are 95 per cent likely to experience recurrent infection after the transplant, where virus levels can surpass the pre-transplant levels within a few days. Importantly, viral replication and ensuing injury can be more aggressive after the transplantation.

This often means that the new liver becomes damaged, and to a level at which it can cease to function in just a few years. As many as a quarter of HCV infected patients who receive a transplant will experience liver failure, possibly leading to death, within ten years.

Until now, doctors have been unable to prevent HCV, which circulates in the bloodstream, from entering the new liver – however results from a trial at Birmingham evaluating a HCV entry inhibitor drug, ITX5061, given before, during and after the transplant dramatically slows down the progress of the virus re-infecting the liver. Although the drug did not clear HCV completely from the blood of the patients, the results of this research suggest that it could be used as a treatment in conjunction with more conventional strategies.

The trial involved 23 patients undergoing liver transplantation. Thirteen

control patients did not receive the drug, and the remaining 10 patients were given ITX5061 on the day of their transplant and for a week afterwards. The levels of HCV in all participants' blood were measured at set time points, with a greater decline noted for all patients treated with ITX5061.

The trial was carried out by researchers at the Centre for Liver Research and NIHR Birmingham Liver Biomedical Research Unit at the University of Birmingham, in conjunction with colleagues at the Queen Elizabeth Hospital Birmingham.

Dr Ian Rowe, who presented the research, said: "This is the first trial in patients undergoing liver transplantation of a drug that blocks HCV entry into the new liver. Until now we have only been able to study this process in the laboratory and this study has allowed us to learn about this process as it happens in patients. ITX5061 treatment was safe and we hope that further studies of this drug in combination with others in development will improve the outcomes for this challenging group of patients."

The findings, Scavenger receptor B-I antagonist ITX5061 modulates early HCV kinetics in patients undergoing liver transplantation: results of a phase Ib clinical trial, were presented on Sunday (November 3) at the Liver Meeting, the Annual Meeting of the American Association for the Study of Liver Disease in Washington DC.

HCV is the second biggest cause of chronic liver disease leading to a transplant in the UK, and the leading cause in the USA. The Health Protection Agency (HPA) estimate that by 2020 15,840 individuals will be living with hepatitis C-related cirrhosis or cancer in England, more than 4,200 with decompensated cirrhosis or cancer for whom a liver transplant may be the only option.

Provided by University of Birmingham