

Morbidity higher in obese liver transplant recipients with diabetes, survival not impacted

January 23 2014

Researchers from New Zealand report that morbidity following liver transplant is highest among obese patients with diabetes, but these risk factors do not influence post-transplant survival. According to the study published in *Liver Transplantation*, a journal of the American Association for the Study of Liver Diseases and the International Liver Transplantation Society, body mass index (BMI) is effective for assessing obesity in liver transplant patients.

One of the greatest health concerns in developed countries is the increase in obesity, diabetes, and [metabolic syndrome](#), which is a combination of [high blood pressure](#) (hypertension), blood sugar (hyperglycaemia), and cholesterol (dyslipidemia) along with increased belly fat. In fact, the World Health Organization (WHO) reported in 2008 that 1.4 billion adults were overweight, and of these 200 million men and 300 million women were obese.

Prior research shows that [liver transplant](#) recipients who develop post-transplant diabetes and metabolic syndrome are at increased risk of cardiovascular disease. Moreover, while death and graft loss resulting from organ rejection has improved in past 30 years, up to 42% of non-graft related deaths are attributed to cardiovascular disease according to a 2002 study by Vogt et al.

"There is much evidence on post-transplant obesity and metabolic

syndrome. However, the impact of pre-transplant obesity, hypertension and coronary artery disease on post-transplant outcomes has received less attention and is the focus of our study." said lead author Dr. Adam Bartlett with the New Zealand Liver Transplant Unit at Auckland City Hospital.

For the present study, researchers recruited 202 consecutive patients undergoing liver transplantation at a New Zealand center between 2000 and 2010. BMI and percentage of body fat were measured before the transplant to compare methods. Analyses of pre-transplant risk factors such as obesity, diabetes, coronary artery disease were conducted.

Participants undergoing liver transplant had a mean age of 51 years and 67% were male with most common reason for being hepatitis C cirrhosis. The BMI was available for 192 patients—4% were underweight, 27% normal weight, 26% overweight, 28% obese, 9% severely obese and 6% morbidly obese. Researchers determined that BMI and measured body fat were similar in 86% of the study group.

Further analyses indicate that obesity was an independent risk factor for diabetes and post-transplant complications. Diabetes in conjunction with obesity was the strongest predictor of complications following transplant and longer hospital stays. Metabolic risk factors did not affect 30-day, 1-year or 5-year survival for liver transplant recipients.

"Our study confirms that BMI is an appropriate measure of body fat and obesity alone should not prevent patients from receiving liver transplants," concludes Dr. Bartlett. "Identifying modifiable risk factors during the pre-transplant assessment allows for earlier interventions including weight control, diabetes management, and coronary interventions such as stenting, all which may improve long-term outcomes following liver transplantation."

More information: "The Additive Effect of Pre-Transplant Obesity, Diabetes and Cardiovascular Risk Factors On Outcome After Liver Transplantation." Anna J. Dare, Lindsay D. Plank, Anthony R.J. Phillips, Edward J. Gane, Barry Harrison, David Orr, Yannan Jiang and Adam S.J.R. Bartlett. *Liver Transplantation*; ([DOI: 10.1002/lt.23818](https://doi.org/10.1002/lt.23818)) Published Online: January 7, 2014.

Provided by Wiley

Citation: Morbidity higher in obese liver transplant recipients with diabetes, survival not impacted (2014, January 23) retrieved 1 May 2024 from
<https://medicalxpress.com/news/2014-01-morbidity-higher-obese-liver-transplant.html>

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