

# Researchers determine risk factors for infection after liver transplantation

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Nearly 9 percent of patients who recently underwent liver transplantation suffered a subsequent surgical site infection (SSI). Risk factors included having had biliary-enteric anastomosis (choledocho-jejunal or hepatic-jejunal reconstruction), previous liver or kidney transplant, and more than four red blood cell units transfused. These findings are published in the June issue of *Liver Transplantation*, a journal by John Wiley & Sons.

SSIs are common after liver transplantation and are a major cause of morbidity and mortality. They result from the technical complexity of the procedure, the fact that it occurs within a potentially infected area of the body and the poor medical condition of many recipients. Researchers aimed to determine the incidence, timing, location and risk factors, including antibiotic prophylaxis, for such infections.

They designed a prospective study that included 1,222 consecutive patients who received liver transplants in 11 Spanish hospitals between August 2003 and September 2005. They included all infections that developed up to six months after surgery, including both wound incisional and organ/space infection, hepatic and intra-abdominal abscess, and peritonitis. To assess risk factors for surgical site infections, they looked at patients who became ill in the first 30 days after their surgery. They then examined possible risk factors for their infections.

SSIs occurred in 8.8 percent of patients, most within the first few weeks after the transplant. About 10 percent of these were fatal, which is a great improvement over the past. The predominant infection site was the

incision (42 percent) while 39 percent of infections were peritonitis; 16 percent intraabdominal abscess and 10 percent hepatic abscess.

Most infections were caused by gram-negative aerobic bacteria, which are inhabitants of the digestive tract. Infection risk was related to choice of antibiotic prophylaxis, with the highest risk seen with the use of cefazolin. Fungal infection occurred in 10 cases, a remarkably high number because many of the participant institutions used fluconazole.

After multivariate analysis, the authors found that, biliary-enteric anastomosis, previous liver or kidney transplant, and more than four red blood cell units transfused were independently associated with the development of SSIs.

The results provide insight into the risk of SSIs in relation to previous transplantation, choledocho-jejunal reconstruction and red blood cell transfusion which could motivate new studies to aid the understanding of pathogenesis if SSI in liver transplantation.

An accompanying editorial considers the history of liver transplantation and the new study by Asensio and colleagues within the context of the literature on SSIs.

It concludes that bacterial prophylaxis should be used in liver transplantation in order to decrease surgical site infections. The agent or agents should provide therapeutic concentration not only in the wound, but also within the biliary tract where anastomosis is created. Randomized trials are needed to determine the optimal antibiotic therapy to prevent surgical site infections after liver transplantation.

Source: Wiley-Blackwell

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