Muscle loss ups mortality and sepsis risk in liver transplant candidates

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Japanese researchers have determined that sarcopenia—a loss of skeletal muscle mass—increases risk of sepsis and mortality risk in patients undergoing live donor liver transplantation. Findings published in *Liver Transplantation*, a journal of the American Association for the Study of Liver Diseases and the International Liver Transplantation Society, suggest that post-transplant sepsis was reduced in candidates with sarcopenia who received early nutritional support with a feeding tube, known as enteral nutrition.

While sarcopenia, defined as loss of muscle connected to bones, is associated with aging, studies have shown it can occur in patients with chronic diseases such as cancer, liver disease, and malnutrition. In fact, research by Montano-Loza et al. found that more than 40% of those with liver cirrhosis also had sarcopenia, which was linked to higher mortality rates in these patients regardless of the degree of liver injury.

The present study, led by Ken Shirabe, MD, PhD from Kyushu University in Fukuoka, Japan evaluated 204 patients prior to living-donor liver transplantation between November 2003 and December 2011. Computed tomography (CT) scans were taken of patients to measure muscle mass along the lower back region (psoas muscle).

Close to 50% of subjects were diagnosed with sarcopenia; 58% in men and 36% in women. Analyses indicate that patients with sarcopenia had a 2-fold higher risk of death than those without muscle loss. Sarcopenia

was independently linked to overall survival and a predictor of sepsis following transplantation.

Enteral nutrition was provided within 48 hours of transplantation in 24% of candidates undergoing live-donor liver transplants from 2003 to 2007, and in 100% of subjects transplanted in 2008 through 2011. After providing routine nutritional support, the incidence of sepsis dropped from 28% (2003-2007) to 11% (2008-2011) in the transplant candidates.

"Our findings indicate that sarcopenia independently predicts mortality and increases sepsis risk in live-donor liver transplant recipient," concludes Dr. Shirabe. "Sepsis was reduced in patients with sarcopenia when nutritional intervention was used. Treatment of malnutrition in transplant candidates may reduce risk of death following transplantation, but larger studies are needed to confirm this evidence."

More information: "Sarcopenia is a Prognostic Factor in Living Donor Liver Transplantation." Toshiro Masuda, Ken Shirabe, Toru Ikegami, Norifumi Harimoto, Tomoharu Yoshizumi, Yuji Soejima, Hideaki Uchiyama, Tetsuo Ikeda, Hideo Baba and Yoshihiko Maehara. *Liver Transplantation*; (DOI: 10.1002/lt.23811).

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