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Researchers report that low levels of sodium in the blood, known as hyponatremia, increase the risk of dying for patients on the liver transplant waiting list. The study published in *Liver Transplantation*, a journal of the American Association for the Study of Liver Diseases and the International Liver Transplantation Society, showed an increase in survival benefit for patients with hyponatremia and a Model for End Stage Liver Disease (MELD) score of 12 or more.

The MELD score measures the risk of death on waiting list. It is calculated using patient's serum bilirubin, creatinine, and prothrombin time and is used by national organ allocation policy to determine the priority for a patient on the transplant waitlist. Patients who are most sick, with a high MELD score, are at the top of the waitlist. Previous research links low serum sodium, in combination with the MELD score, to increased waitlist mortality, prompting Organ and Procurement Transplant Network (OPTN) directors to approve a new policy that gives additional MELD score points (1 to 13 based on serum

sodium value) to patients with hyponatremia.

Dr. Pratima Sharma, with University of Michigan Health System in Ann Arbor and lead study author notes, “While the OPTN serum sodium allocation formula may reduce deaths on the waitlist by enhancing access to donor organs, it is not clear if candidates with hyponatremia gain any survival benefit over patients with normal sodium levels. Our study examines if patients with low serum sodium prior to liver transplant have a greater survival benefit than patients without low serum sodium, all other things being equal.”

Using data from the Scientific Registry of Transplant Recipients, researchers identified 69,213 candidates, 18 years of age or older,

who were on the waiting list for liver transplant between January 2005 and December 2012. Liver transplant recipients were matched to waitlist candidates with the same MELD score and located in the same donation service area.

Findings indicate that the liver transplant survival benefit increased significantly with decreased serum sodium levels when MELD scores were 12 or more. The survival benefit was not affected by low sodium values for candidates with MELD of 11 or less. Dr. Sharma concludes, “Our results suggest that adjustment based on serum sodium for the purpose of the liver allocation process should be considered for those candidates with low sodium levels and a MELD score of at least 12. Health care providers should also alert liver transplant patients on the waiting list

that low sodium levels could increase their mortality risk on the waitlist and may affect the expected survival benefit following liver transplantation."

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