Distance from designated VA liver transplant center linked with greater risk of death

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Veterans with liver disease who live more than 100 miles from a Veterans Administration hospital that offers liver transplants are only half as likely to be placed on the liver transplant waitlist to receive a new organ compared to veterans who live closer to transplant centers, according to a new study from the Perelman School of Medicine of the University of Pennsylvania. The findings, which are published in the March 26 issue of *JAMA*, also reveal that the further liver disease patients live from these five transplant centers, the more likely they are to die.

"Our study is the first to show that while the VA model of centralized healthcare might serve to control costs, concentrate specialized expertise, and minimize regional differences in the quality of care provided, it actually has negative consequences for many veterans," says David Goldberg, MD, MSCE, an instructor of Medicine at the Perelman School of Medicine of the University of Pennsylvania and lead author of the new study. "Increased travel time to a transplant center likely prevents patients from being evaluated for transplantation, and thus ultimately making it onto the waitlist. Among the subset that are waitlisted, increased distance is associated with decreased transplant rates, most likely because those patients at greater distances are unable to travel to the designated center quickly enough to receive a transplant after an organ becomes available. Our findings show that this distance places patients who live far away at a disadvantage that may put their lives at risk."

The VA system currently centralizes liver transplant care to five transplant centers (VATCs) nationwide, located in Houston, TX; Nashville, TN; Pittsburgh, PA; Portland, OR; and Richmond, VA. Patients who are insured through VA insurance and require liver transplant services must receive care at one of these five centers. The centralization of liver transplant care within the VA health system serves as a unique model to study the association between geography on access to specialized healthcare offered at a limited number of centers using a well-characterized national sample of patients in need of the service.

The Penn team conducted a retrospective review of 50,637 liver transplant-eligible veterans who received care between January 2003 to December 2010, using the Veterans' Health Administration (VHA) Corporate Data Warehouse. The data were linked to a national data repository of patients waitlisted for liver transplantation, managed by the United Network for Organ Sharing (UNOS).

Researchers found that there were significant differences in access to waitlisting depending on distance from a transplant center. For each doubling in distance from local VA hospital to VA transplant center (i.e. 50 vs 100 miles), there was a 9 percent decreased likelihood of being waitlisted at a VA transplant center.

Among veterans with severe liver disease, 7 percent of those within 100 miles were waitlisted at a VA transplant center, compared with 3 percent among those greater than 100 miles from a VA transplant center. These differences persisted even when accounting for those veterans who were waitlisted at their local, non-VA transplant center.

Among waitlisted veterans, distance appeared to be related to their chances of ultimately getting a transplant, with 64 percent of veterans who lived within 100 miles of that VA transplant center undergoing the surgery, compared with less than 55 percent of those living beyond 100

miles.

These differences in access to waitlisting and transplantation ultimately impacted survival, with increasing distance from a VA transplant center being associated with significantly increased risks of dying. Specifically, five-year survival rates from the date of being diagnosed with end-stage liver disease were 58 percent for veterans living within 100 miles of a VA transplant center, compared with less than 45 percent for veterans greater than 300 miles away.

"Patients waitlisted at a VA transplant center must relocate with a primary support person for at least one month post-transplant unless they live within reasonable driving distance, placing those without the resources or ability to relocate their family and/or a support person at a disadvantage," said the study's senior author, David Kaplan, MD, an Assistant Professor of Medicine and Director of Hepatology at the Philadelphia VA Medical Center.

Unlike many geographic disparities in health care that are linked to rural areas – distance to trauma centers and advanced stroke care, for instance, have been shown to be greatest in rural areas – even VA patients in urban areas are impacted by the current structure of the VA transplant centers. The Pittsburgh VA transplant center, for instance, is the closest VA transplant center to the New York Metropolitan area, yet is greater than 300 miles from New York City. Patients in closer proximity to these centers are also more available to serve as backup recipients, in the event the intended recipient falls through, the study points out.

While the VA National Transplant Program is helping to mitigate disparities in access by approving the opening of two new VA liver transplant centers, the authors do not believe this will fully alleviate geographic differences in access to transplantation. Drs. Goldberg,

Kaplan and colleagues suggest several potential mechanisms to improve access and mitigate these disadvantages of distance, including using telehealth, deputizing local provider teams to perform initial waitlisting evaluations, streamlining referral to VA transplant centers, or lowering financial disincentives for access to local transplant services.

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