Fewer Liver Transplant Candidates Will Die on the Wait List

Reviewing the UNOS proposal to decrease transplant regions, this article discusses the impact to candidates in urban and rural areas as far as logistics, ischemia time, and getting the sickest candidates transplanted first.

June 8, 2015 By Kimberly Fernandez, RN, CCTN

As of 2014, the liver transplant wait list had 15,323 candidates and only 6,729 liver transplants were done nationwide, according to Organ Procurement and Transplantation Network (OPTN). Candidates are moved up and down the wait list based on a calculated score called Model For End Stage Liver Disease (MELD), which determines how sick a candidate is. A MELD of 30-39 has a 52.6% of mortality and 40 or more has 71.3% chances of mortality (Weisner et al., 2003). A candidate with the higher MELD is offered a liver first within a geographic region based on a local, regional, national algorithm. This often results in the sickest candidate not receiving an organ first because of geographical constraints (The Advisory Board Company, 2014).

The OPTN data stated that in 2013, on average 8 people die each day while waiting for a liver transplant resulting in 1,523 deaths and 1,552 candidates taken off the wait list because they were too ill. The average wait time for liver transplant candidates with type O blood, the longest wait list blood type, was 457 days or 1.25 years from 2003-2004. This has decreased significantly from 1999-2000 which the average wait time was 1314 days or 3.6 years.

Having worked as a registered nurse on a liver transplant unit at the UCSF Medical Center, liver
transplant patients are a high acuity patient population, meaning they are incredibly sick patients. The common symptoms of a patient with end stage liver disease are yellow skin, swollen legs, stomach distension to the point of shortness of breath at rest, and malnourishment with muscle wasting to the point of becoming bed bound. The brain swells due to increased ammonia levels in the body that causes patients to become confused and sometimes agitated, called hepatic encephalopathy. Lactulose is a medication used to resolve hepatic encephalopathy by excreting the ammonia through its laxative effects. Patients often have skin breakdown from constant incontinence care and often embarrassed because they can not get to the restroom in time. Many patients with liver disease are extremely fatigued and depressed often wanting to give up hope while waiting to get a liver transplant.

Being this sick, many patients can’t survive for 1.25 years to be transplanted. The United Network for Organ Sharing (UNOS) along with the OPTN has acknowledged this and proposed in 2012 to change the current region system for liver allocation from 11 regions to either four or eight regions. A member of UNOS stated “The overall goal of redesigning liver distribution is to decrease the variation in access to liver transplantation nationally. In some areas of the country candidates must wait much longer and become much sicker before they are able to receive a liver transplant than some other areas of the country. By broadening the boundaries in which livers are shared, candidates would have an increase in their access to donated livers. For areas that currently experience longer wait times, we anticipate by moving to a model of broader sharing, the wait times would decrease. For areas of the country that are currently transplanting less sick patients, we anticipate they may experience a slight increase in wait times as their candidates are not as critically ill.” (A. Archer-Hayes, personal communication, March 26, 2015).

Since 2012, the OPTN/UNOS liver and intestinal organ committee has been obtaining data through the Liver Simulated Allocation Model (LSAM). It is a computer program designed to reduce the variation in the median MELD as well as decreasing wait list deaths. The data has shown to decrease deaths on the wait list by 581 people per year if the regions are reduced to four. The LSAM uses historical inputs of donors and candidates, organ offer acceptance practices, and removals for death or other reasons to create simulated outputs. Examples of these outputs are number and rate of wait list deaths, median MELD scores, average transport times, and the percentage of transplants based on demographics or MELD scores greater than 25 (OPTN/UNOS Liver and Intestinal Organ Transplantation Committee, 2014).

Based on comments from a public forum held in September 2014, main concerns for restructuring the regional map were increased costs, organs shifting from higher performing organ procurement organizations (OPO) to lower performing OPOs, and poorer outcomes post-transplant by transplanting more critically ill candidates. The Advisory Board Company (2014) voiced the concerns of physicians in areas with high liver organ donation rates becoming an “organ farm” to areas with lower organ donation rates by reducing the number of regions from 11 to eight or four. Urban areas have higher wait lists and less organ donations while the Midwest and South have high donations with a lower number of candidates on the wait list. Physicians in high organ donation areas are concerned organs will be “farmed” out to urban areas with high liver transplant wait lists. UNOS argues that candidates on longer wait lists, such as in urban areas, become sicker...
and therefore have a greater need for the organ than a person who is less sick on a shorter wait list in a rural area.

As a nurse on the liver transplant unit, I was curious if the reduced region proposal would increase the number of liver transplants done at UCSF and its impact on the California liver transplant wait list. Dr John Roberts, chief of transplant at UCSF, stated “the proposed four and eight regions do not dramatically effect California. Transplants may increase somewhat, but patients who can travel to other areas will benefit. California is disadvantaged because the surrounding states do not have dense populations, so that organs have to travel long distances. The proposed plan limits travel time to three hours for shared organs which means the population around California can’t support it. The cost will rise because organs that do come to California will require long travel times.” (J. Roberts, personal communication, March 25, 2015).

A public forum is planned to be held in the first half of 2015 by the liver subcommittees to further discuss the issues with decreasing the regions: finance, logistics and transportation, metrics of disparity, and optimization of distribution. (A. Archer-Hayes, personal communication, March 26, 2015). The OPTN/UNOS Liver and Intestinal Organ Transplantation Committee (2014) states the earliest a policy proposal will be circulated to the public is Spring of 2015.

References


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