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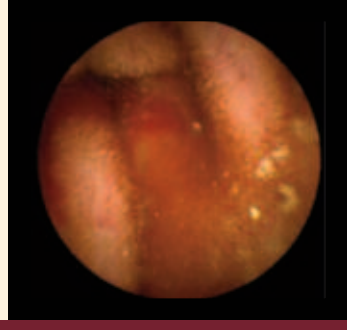

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Trimming the Wait List

Zhiping Li, Ayman Koteish, James Hamilton and Karen Krok confer on a thorny liver transplant question.

THE CASE: When the 65-year-old man's liver began to fail, his physicians weighed dwindling options. Dreading the chronically long waiting list for liver transplants, the physicians had been searching for new ways to increase the organ pool. They'd developed a growing suspicion that the waiting list for viable livers could be dramatically shortened—by taking a second look at the organs available from elderly donors.

Conventional wisdom held that livers provided by donors over the age of 70 proved up to 40 percent less reliable in recipients, as opposed to those obtained from ideal liver donors—those under the age of 40. What researchers hadn't yet considered was whether more careful selection of recipients could improve their outcomes.

The patient at hand had no serious comorbidities. He did not suffer from hepatitis C. He also had good social support. Those key factors made him a good transplant candidate, but they only marginally improved his odds of surviving an organ waiting list that had ballooned past 17,000. With only 6,000 liver transplants performed annually in the United States, one in four transplant candidates may die waiting.

But what if the physicians considered using the organ of an elderly liver donor, otherwise known as an ELD?

EMERGING HYPOTHESIS: Compared to other organs that decline naturally with age, the liver is known for its longevity in patients who die from unrelated causes. Healthy livers from donors who'd died suddenly were optimal. In recent years, the most ideal liver donors (ILDs) were deemed to be those between the ages of 18 and 39; average livers came from those up to 69 (the ALDs); the ELD threshold started at 70.

In analyzing the three donor categories, Hopkins researchers learned that many transplant surgeons only resorted to ELD organs when their patients were in extremis. The disproportionate number of desperation cases associated with ELDs appeared to skew the outcomes. ELD organs might be better than their numbers indicated.

In 1998, they were able to apply this new thinking to their dying 65-year-old.

TREATMENT DECISION: When physicians here learned that an 86-year-old man had died from a stroke, they informed their ailing 65-year-old patient of the organ's availability. They told him of the mixed outcomes history with ELD organs. They also told him why those risks might have little bearing on his case. With the average waiting time for a liver transplant at 796 days, the new transplant candidate agreed to the ELD.

The graft performed perfectly. The patient lived to age 72, dying of an unrelated cause.

DISCUSSION: The case cited comes from a four-year study by liver transplant director Paul Thuluvath and surgeon Dorry Segev that examines the value of patient-donor matching to outcomes. In a paper accepted for the December 2007 issue of *Hepatology*, the authors conclude that when ELD organs were matched with preferred transplant candidates, the patients' outcomes virtually matched those of patients receiving ILDs: Three years out, 80 percent of patients from all three categories were still alive. "The key is to match the recipient with the donor in an objective manner," says co-author Thuluvath. "The study showed that it could be done easily among the sickest patients on the wait list."

The researchers could also quickly see that ELDs are underused. Of the 23,763 liver transplant cases in the four-year study, only 1,043 of them came from ELDs. That's just 260 ELDs per year. With over 160,000 people dying yearly from strokes alone—and most of the decedents over 65 years old—"the potential to expand the organ pool by tapping into ELDs is huge," says Thuluvath. "If we could retrieve organs from 5 percent of this population, we may have 8,000 ELD organs."

With liver disease-related hospital admissions rising at an annual rate of 5 percent, there may be a new answer at hand. ■

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