Liver Transplants Endorsed

An NIH consensus panel recommends more transplants but does not say who will pay

A National Institutes of Health (NIH) Consensus Development Conference on Liver Transplantation has concluded that the procedure has merit, especially because many transplant patients would otherwise die. But the panel purposely sidestepped the central issues of who should pay for these transplants and how many would be needed should the procedure become generally available.

Patients who opt for liver transplants have reached a stage of desperation, realizing that without a transplant they are certain to die, often within a matter of weeks or months. These include people whose livers were destroyed by viruses, by metabolic diseases, by exposure to chemicals, by inborn structural defects, by alcoholism, or by cancer. Currently, most liver transplants in the United States are performed at the University of Pittsburgh but small transplant programs recently have begun at the University of Tennessee, the University of Minnesota, the University of California at Davis, and Massachusetts General Hospital. The major European centers are at Addenbrooke's Hospital in Cambridge, at Medizinische Hochschule in Hannover, and at University Hospital in Groningen, the Netherlands.

"I think it is important to stress how sick most of our patients are," said Keith Rolles, a surgeon at Addenbrooke's Hospital and a speaker at the conference. Half of the patients Rolles sees die while waiting for a transplant even though the average wait at his hospital is only 3 weeks. Those patients who are operated on at Cambridge and at the other centers frequently have reached a point at which their kidneys have failed, their abdomens are grossly distended, and they are in comas.

When liver transplants succeed, however, they often succeed dramatically well. Rolles showed slides of patients who were brought back from the verge of death and who now are marathon runners or skiers or backpackers. Forty percent of the 138 patients who received transplants in England over the past 15 years have survived at least 1 year. David Van Thiel, a professor of medicine at the University of Pittsburgh, says, "Eighty-five percent of those who survive are back at 40 hours a week gainful employment. Two of our patients got pregnant and had children. [These transplant patients] are identical to normal populations. Their quality of life is *excellent*." At Pittsburgh, says surgeon Thomas Starzl, 63 percent of patients now live for at least 18 months after their transplants. He attributes much of his recent success to the new immunosuppressive drug Cyclosporin (see *Science*, 1 July, p. 40).

Of course, given the alternative of certain death, most people would opt for transplants. But it is not at all clear what percentage of transplants succeed overall. "Terrible data," says Ralph D'Agostino, a statistician from Boston University, who was a member of the consensus panel. The panel urged that a registry be established so that data on the procedure could be collected and evaluated. Although the panel was asked to determine the outcome of liver transplantation in different groups of patients, it concluded that "The interpretation of existing data on survival is extremely difficult because no control data are given for comparison, surgical techniques and drug therapies varied over time, and patient selection criteria and management differed across centers."

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The panel did conclude, however, that 20 to 40 percent of all transplant patients die within the first month of the operation, often from massive hemorrhage. Ruud Kroom of University Hospital in Gronningen told the panel, "Extensive bleeding during surgery requiring massive transfusions is a major cause of death." He has transfused as many as 50 liters of blood into a transplant patient and, he says, although the median blood loss is 10 liters, "it is not exceptional to need more than 20 liters of blood."

Although the panel concluded that transplantation could be considered for nearly all patients who are near death from liver disease, it did list some exceptions. Alcoholics who have not stopped drinking and viral hepatitis patients who still have the virus present in their bodies have poor prognoses. Liver cancer patients often have their cancer recur but, the panel said, transplants for these cancer patients still "may achieve significant palliation."

At the current time, however, most terminal liver disease patients are *not* offered transplants. For one, there are too few transplantation teams and, for another, there are too few livers. Last year, only 2500 brain-dead patients donated organs (see *Science*, 1 July, p. 32). The panel recommends that more transplantation centers be established.

Asked how many patients might avail themselves of liver transplants if more centers were established, panel chairman Rudi Schmid, who is dean of the University of California School of Medicine in San Francisco, said he simply does not know. "There are no valid data on the frequency of liver disease. Certainly there are hundreds of patients. Whether there are thousands, we don't know. Whether there are tens of thousands—I doubt it."

But at least as important as the availability of transplant teams and of donated livers for transplanting is the question of who will pay for the procedure. At present, neither the federal government nor private insurance companies pay. Thelma King Theil, vice chairman and executive director of the American Liver Foundation, told the consensus panel that families now have to raise the $100,000 to $200,000 needed for a transplant before a patient can even be admitted for evaluation. Some families have made public appeals for funds and private charities have sometimes helped. But the process is hardly equitable, perhaps reflected by the fact that of the 540 transplant patients worldwide, 93.3 percent were white.

Schmid remarked that the consensus panel report will undoubtedly be considered by the federal government and by private insurance companies when they make their decisions on reimbursement. The Medicare decision, Schmid said, is due in August.—GINA KOLATA