

Comprehensive and Multidisciplinary Liver Transplantation Program at Penn Medicine

Melanie Cole (Host): Welcome to the podcast series from the specialists at Penn Medicine. I'm Melanie Cole. And joining me in this panel are Dr. Peter Abt, he's the Surgical Director of Liver Transplantation and a Professor of Surgery at the Hospital of the University of Pennsylvania and the Children's Hospital of Philadelphia; and Dr. Kim Olthoff, she's the Chief of the Division of Transplant Surgery and a Donald Guthrie Professor in Surgery at Penn Medicine and the Children's Hospital of Philadelphia. They're here to talk about responsible expansion of liver transplantation.

Doctors, thank you so much for joining us. And Dr. Abt, starting with you, please describe the leading advantages for individuals considering the Penn Liver Transplantation Program as you're speaking to other providers that are counseling their patients.

Dr Peter Abt: Sure. So one of the main advantages of Penn is our depth of experience. We are one of the largest liver transplant programs in the United States and have a long history of taking care of patients with liver disease. We've done well over 3000 liver transplants in our history and that depth of experience allows us to take care of very complex sick patients. An example of this would be our care for patients who need more than just a liver, those patients who might need a liver and a kidney, a liver and a heart, or perhaps a liver and a lung. In addition, we have a broad experience doing living donor liver transplants, which offers patients an additional way of obtaining a transplant.

Dr Kim Olthoff: The other thing we have that I think is very strong at Penn is our multidisciplinary teams, because our programs are so big, and as well as doing so many other solid organ transplant, we have consultants and colleagues in all the subspecialties who are very, very experienced in taking care of patients with end-stage organ failure or post-transplant patients who are immunosuppressed and have all the issues that they have to deal after transplant. And these are people such as infectious disease experts and physical therapists and nutritionists and pharmacologists and cardiologists and kidney doctors and all these people who understand what it means to have a liver transplant. We also have specialty groups that deal with patients who fall within a certain category. So we have a huge multidisciplinary group that takes care of patients who have had liver cancer or have had a cellular carcinoma and we have a focus group for patients who have had alcoholic liver disease to help them in the postoperative period, which includes social workers and

psychiatrists and hepatologists and such. So it's because of the experience and the expertise of these people taking care of transplant patients that makes Penn a special place to be.

Dr Peter Abt: I would also add that Penn is a research institution, and there are many opportunities for patients to participate in research trials, some of which are innovative and are not available at other centers.

Dr Kim Olthoff: Yeah, absolutely. our goal is to make sure that every single patient that comes to Penn is enrolled in some sort of research protocol, whether it be a clinical trial or our bio-repository where we, you know, have samples of blood and liver and things like that, which can help so many other people in the future.

Melanie Cole (Host): Well, thank you for that. And it's such a comprehensive program, and as you say, Dr. Olthoff, a multidisciplinary team. So what do you see as the greatest single challenge facing the field of liver transplantation? Is it the constraints to meeting the annual demand for liver transplantation or the several issues, the shortage of donor organs? Tell us a little bit about those challenges.

Dr Kim Olthoff: I think the main challenge for our patients is the access to donor organs. There's a shortage of deceased donor organs available. And that's the reason, you know, we are putting programs into place to try to expand access to donor organs. The big challenge for the patients is dealing with their end-stage liver failure as they await liver transplantation. And we've gotten good at it, . We have a very, experienced hepatology team that's dealt with end-stage liver failure patients taking care of all the symptoms and problems that go along with that while they're waiting for liver transplantation.

Dr. Abt, I think, can speak to the current issues that are going on with organ allocation and how that's on one hand made some things better, but on the other hand, made it more difficult to get organs as well.

Dr Peter Abt: Yes. UNOS, which is the United Network of Organ Sharing, has spent years trying to figure out how to fix geographic inequities in distribution of organs. And some of those things have been corrected, some of the problems, but others remain an issue and these are ongoing discussions and debates that will continue for years,

Melanie Cole (Host): well, Dr. Abt, along those lines, as you have an active living donor liver transplantation program, tell us a little bit about how the

program works and highlight for us progress on the waitlist management, reducing waiting times. What do transplant programs need to do?

Dr Peter Abt: So Penn has one of the larger living donor liver transplants in the country. And this offers patients an alternative to waiting on the deceased donor list for a transplant. So it provides them with earlier access to a transplant before they become too ill. And we know that transplanting patients earlier in their disease process results in better long-term outcomes. So it's a real advantage for patients. We encourage all potential transplant candidates to seek out living donors. And this could be friends or family members or even people they don't know, but perhaps someone in their family might know, a distant acquaintance, for example.

Dr Kim Olthoff: Living donor liver transplantation is really what we want our patients to think about as the first option, rather than waiting on a list until hopefully, you know, they get an offer for a deceased donor transplant and almost all patients are potential recipients of living donors. There are very few that do not qualify to be a living donor recipient. And I think what's important for the other providers to hear is that people should be referred for a liver transplantation before they get too sick, because that's the time when you can start looking for a living donor and, you know, before their score for listing is really high and before they get too sick, before they start having problems with other organs, such as kidneys and things like that. So we really try to encourage every single patient that's referred to us to think about, you know, who might be a living donor.

The other thing we're setting up is an altruistic donor program it's quite well developed in the kidney transplant program here and now we're doing it in the liver transplant program as well, where someone wants to do something good for someone else and they're willing to go through donating part of their liver as a living donor. And that's really exciting and really special.

Dr Peter Abt: I would also add that we try to make it quite easy for potential donors to get evaluated so that they can donate. Anyone who's interested in donating can enter their information for an initial screen through our website. And then once that initial screen is complete, we can rapidly complete their evaluation depending on their needs and their timeline.

Dr Kim Olthoff: Yeah, it's super easy to just log on. And there's some initial screening questions to say you may or may not be a donor. And then you go in further and get to answer more questions about your health But we've tried to make it As easy as possible. We also have built a website that's a living donor

journey where the donors can watch videos and share their experiences so that other donors can learn from their experience.

Dr Peter Abt: And many donors are concerned about taking time off from work and finances and so on and so forth. There are programs in place to help offset some of the costs related to donation that are sponsored through the American Society of Transplant Surgeons and the government that donors can take advantage of if they so desire and if they qualify.

Melanie Cole (Host): Well then, Dr. Olthoff, what does the process look like when a patient gets to your transplant center? What can they expect when they've been placed on the list, the waitlist experience, how the time is calculated and what's involved in management of patients on the wait list. You discussed the multidisciplinary approach. Tell us a little bit about the process at the center at Penn Medicine.

Dr Kim Olthoff: You know, people come to us in different ways. Most people are referred to us to come for the evaluation clinic, which is really a one day, one-stop shopping kind of experience where they come in and meet all the team members, the surgeons, the hepatologists, the social workers, the financial people, the transplant coordinator, cardiology. COVID also has helped us actually enhance our telemedicine, so some of these people, might have a virtual visit. at the beginning, they're assigned a transplant coordinator who is their ambassador to lead them through the process and to keep everybody on the same page and make sure everybody's informed for their entire journey until they get transplanted. There's a lot of studies and hoops they have to jump through in order to get evaluated and listed. And people are listed according to a certain score. called a MELD score, which correlates with how sick they are. And that's where they get placed on a list after they've been discussed by the entire multidisciplinary team at our patient selection meeting. And then, we follow them until they get transplanted, whether it's with a living donor or whether they get an offer from a deceased donor with a whole multidisciplinary team approach coordinated by their transplant coordinator.

Dr Peter Abt: I think as part of the wait listing process, we evaluate each patient individually and assess how sick they are. And some patients have a fairly low MELD score, but their disease process is quite advanced and these patients are somewhat disadvantaged. And when we have a patient like that, we meet with them and discuss potential options for them to receive a transplant when receiving a deceased donor may be somewhat difficult and we consider options such as organs that may have some various characteristics that may not be usable by some standards, but certainly usable for that recipient. And we also

discuss with them the potential to find living donor recipients. So we try to strategize with the patient how they can achieve a transplant.

Dr Kim Olthoff: Yeah, really kind of personalized approach. You know, each patient there's different approaches to how we might get them transplanted and how we can do that as soon as possible.

Melanie Cole (Host): I'd love to give you each a chance for a final thought on this great topic. And Dr. Abt, starting with you here. I understand that Penn is finding innovative ways to increase access to deceased donor liver transplantation. Can you describe a little bit about those efforts and their benefit?

Dr Peter Abt: Yeah, we take a multi-pronged approach to expanding access by increasing the number of organs available for utilization that is for transplantation. And some of the innovative things that Penn has done for example is to use organs that were previously considered non-transplantable, such as organs from patients who have hepatitis C. So these donors may have a perfectly good liver, but that donor has been infected with hepatitis C. We have done groundbreaking research here at Penn, showing that we can use those organs and then treat the recipient of those organs for hepatitis C after transplantation and there's a hundred percent cure rate after the transplant. So that's one example.

Other examples include some perfusion technologies where we take organs that perhaps again maybe had characteristics that made them less favorable for transplantation, but were able to perfuse them in the donor or outside of the donor's body with oxygen, with blood, and find that they are usable organs and that they can be successfully transplanted.

Dr Kim Olthoff: perfusion of organs outside the body, where we can maintain these organs for a while before their transplant and that's called ex vivo perfusion, and there's a lot of research going on in that area. But other things that can happen is while those organs are on the pump, you can maybe modify them, add molecules to them or take things away that make that organ more transplantable

Dr Peter Abt: So those are just sort of a few examples of ways we're trying to expand the donor pool. I would suggest another example is the use of split organs. So sometimes a deceased donor liver can be divided for two recipients. A portion of it might go to a small child at the Children's Hospital, but the rest

of the organ can be successfully transplanted into adult. And Penn is one of the few centers that's successfully doing this.

Melanie Cole (Host): Absolutely fascinating as you're advancing medicine. And Dr. Olthoff, last word to you. I'd like you to speak to other providers about the recommendation for timing of referral in liver transplantation. And while you're doing that, tell us what you see in the future of liver transplant. And is there a search for alternative therapies for the failing liver as you mentioned that ongoing shortage of donor organs? Please speak to the future. Give us a little blueprint for research

Dr Kim Olthoff: As far as the question about referral, we like to ask referring doctors and other providers to send patients as early as possible, even if they don't think they're able to get a liver or if they think they're early for transplant, because we'd rather get to know them sooner and tell them they're early and we'll keep following rather than, be transferred when they're very sick as an inpatient. So this is our recommendation and hope that's what will happen because then, like we talked about, we can talk about living donation and do things before some of the bad things happen when you have liver disease for a very long time.

As far as the future, you know, Dr. Abt mentioned all the different potential options for transplantation and we will try to continue to grow all those programs. Other programs are swapping of organs segments or different organs even. Say, if a living donor comes forward and their segment of liver is not appropriate for their recipient, maybe they can donate a kidney to someone else. And then their donor can donate a piece of their liver back to their recipient. So there's all these unique ways that you can try to get people transplanted And there's been all that recent media on the pig organs, you never know where that might lead in the future as well. And we have a lot of different cellular therapies and exciting research that happens here at Penn, so we always hope that many of those things can be applied in the liver transplant setting.

Melanie Cole (Host): Thank you both so much for joining us today. To refer your patient to Dr. Abt or Dr. Olthoff at Penn Medicine, please call our 24/7 provider-only line at (877) 937-7366 or you can always submit your referral via our secure online referral form by visiting our website [pennmedicine.org/referyourpatient](https://www.pennmedicine.org/referyourpatient). That concludes this episode from the specialists at Penn Medicine. I'm Melanie Cole. Thanks so much for joining us today.