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Discussion to: Safety and Efficacy of Delaying Lung Transplant Surgery to a Morning Start

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Dr. Daniel Kreisel (St. Louis, MO):

Dan Kreisel of Wash U in St. Louis. Congratulations on presenting a paper that deals with a very timely topic. Our group led by Varun Puri reported that nighttime transplants are associated with a higher risk of postoperative adverse events including pneumonias and as you mentioned decreased long-term survival. For a variety of reasons, there's been an effort in our field to convert lung transplants from urgent to semi-elective procedures. One of the obvious reasons is that none of us function at that peak at 1:00 in the morning. I'm reminded of a quote by one of my colleagues in abdominal transplantation at Washington University who used to say, "If you had a child who needed complex surgery to repair a congenital heart defect, would you ask the surgeon to start the operation at 2:00 in the morning?" I have three questions. The night
group in your study included cases where the donor cross-claim time was scheduled to occur between 1:30 in the morning and 5:00 in the morning. This is a very narrow window which resulted in only incremental increases in ischemic times between your night group which was 5.7 hours and your controlled group which we call the day group which was 4.75 hours. In fact, the ischemic times for many of your night group transplants follow what most programs would consider to be a safe range for transplantation after cold storage. How did you select those time brackets to define your night group? As a matter of fact, it seems to me that, using these criteria, many of your controlled group transplants which you called day transplants occurred during the night.

Dr. Samuel Kim (Los Angeles, CA):

Yeah. Thank you for your comments. And that's definitely a limitation in our study with the night group only having a 1 hour longer ischemia time. And some will argue 5 a half hours is actually reasonable. I think this was a fairly-- it's a single center study, and I don't know that until we have good sufficient data to be able to truly delay the lung transplant operation for long periods of time-- we wanted to initially be somewhat conservative in terms of how long we were willing to wait, so that's why we initially picked from that time frame. So yeah.

Dr. Kreisel:

My second question is, does UCLA I guess have a dedicated operating room for lung or thoracic transplantation? And what impact does moving lung transplants from the night to an early morning start have on the elective cardiothoracic surgery schedule?

Dr. Kim:

So, there's not a dedicated lung transplant room. It ends up bumping the cardiac surgery room. It usually ends up being Dr. Ardehali’s own cases who does a significant portion of our lung transplants. But yeah, that's certainly something to consider. In terms of operating room resource utilization, I think starting a lung transplant in the middle of the night-- we'll call in our night staff, and then there's always kind of the transition from the night team to the day team. So, I think potentially reducing that sign-out period might be beneficial also. But yeah, that's definitely something to consider.

Dr. Kreisel:

And my final question is, could you discuss your findings in the context of the recent work that was spearheaded by Marcello, Conrad, and the group in
Madrid on semi-elective lung transplantation after storage at 10 degrees where ischemic times of up to 15 or 16 hours seemed to be tolerated without adverse impact on outcomes.

Dr. Kim:

Yeah. I think Marcello's group published some amazing data. And at UCLA we hadn't been using the 10-degree storage. And that New England Journal paper was quite remarkable, and I think that's something that as a lung transplant community we should continue to explore.

Dr. Kreisel:

Thank you. Congratulations.

Unidentified Speaker 1:

Thanks. I enjoyed your paper. But I would like to caution you that the title of your paper doesn't seem to connect with the data you showed. I mean, you talk about safety and efficacy of delaying nighttime transplant to a morning start. And then you describe 6 hours of ischemic time, which is one of the fallacies in the United States where surgeons think that 6 hours is a long time for lungs. And then also, only prolonging it by 1 hour really hasn't helped anybody. I mean, the data that you can preserve lungs for longer than 12 hours is over 20 years old. So, I think for people to learn that, yes, the way you're preserving lungs, you could do anyway. So, you haven't really demonstrated for the audience the safety and efficacy of a change in practice. I think it's really important to get that across. Just as a comment.

Dr. Kim:

Thank you for your comment. And I guess maybe Dr. [Rahali?] here has a rebuttal.

Unidentified Speaker 2:

No, I'm sure-- first of all, thank you very much, Hugh. I think you did a great job presenting this report. I think the objective of this study was not to prolong the ischemia time. The objective was the issue of team fatigue. We, like many of the centers in this room, do about 160 to 200 transplants a year, and it's the same team. And our objective was to see if we could take a cohort of transplants and delay it a few hours later. And we had no intention of
prolonging the ischemia time, but rather address the issue of team fatigue and physician wellness.

Unidentified Speaker 1:

I think that's a really important concept, that we should move the transplants to the morning. Just the fact that try and changing it by 1 hour when he said will change burnout and fatigue, 1 hour is not going to change burnout. That's my argument. Just 1 hour didn't prove that. I think it's a very important point.

Unidentified Speaker 2:

Right. The 1 hour refers to the ischemia time. But delaying it till 6:30 in the morning means that we did not do a lung transplant between probably 11:00PM till 6:30 AM. So, it does impact the outcome in terms of the physician fatigue and the availability of the team.