Dr. David McMullan (Seattle, WA):

Dr. Shi, you and your team are to be congratulated for outstanding results in a very large cohort of patients. And from what I gather from your paper and your presentation is that most, if not all of these patients were transferred to your center from an outside center. Is that correct?

Dr. Guocheng Shi (Shanghai, China):

Yes, that's correct.

Dr. McMullan:

That's correct? Okay. And although it's not really specified in your manuscript, I mean, these patients are at 14 days of age when they arrived at your center, so
they're arriving somewhat late, and so it does introduce a question of if not selection bias as some bias because likely, the most extreme forms of obstructed TAPVR are being eliminated from the discussions. Is that correct?

Dr. Shi:

Yes.

Dr. McMullan:

Okay. I do think there's some value in this because what you have is a very highly regionalized care system. And it's important for us in this country because there's a lot of discussion that's ongoing about should we regionalize our care in pediatric patients, and I do think there's insights that can be gained from systems like yours. I have a few questions for you. First, your study highlights the importance of optimal preoperative management of these patients. And I find it interesting that a larger proportion of your non-DPC patients that underwent surgery underwent surgery within 24 hours. These are emergency surgeries for non-DPC patients. Correct?

Dr. Shi:

Yes.

Dr. McMullan:

But they also arrived at a higher lactate when they went to the surgery. So, my question to you, is it possible that these patients were simply sicker when they arrived at your center than the patients who were in the DPC group?

Dr. Shi:

First of all, the baseline characteristics were similar between the two groups, and in no DPC criteria is a lack of protocol-- there is a lack of standardized protocol. And as we show in the presentation, the people in the no DBC group lack sufficient training in congenital heart disease. Sometimes there may be some inappropriate treatment in no DPC group, such as, for example, if the patients had moderate obstructive pulmonary [inaudible], the increased pulmonary blood flow-- they may have increased upon pulmonary blood flow and the increased pulmonary vascular resistance. If the use of such as PG therapy or pulmonary vasodilator were increased, will be associated with worsening pulmonary edema, and these patients tended to have emergency
operation. This may be the reason why a higher portion of patients undergoing emergency surgery in no DPC group.

Dr. McMullan:

I think it's interesting that they arrived relatively late, and so it raises questions about what type of care the patients received before they came to your hospital.

Dr. Shi:

Actually, our hospital is a freestanding children's hospital. And there are two pathways where we receive the patients in this series. Some patients were diagnosed with TPBI outside hospital, and the physician or primary care provider in the local hospital recommended this patient to our hospital, alternatively to an ICU or CICU. And before the admission, the treatment, we don't collect the data. And so, we just revealed the data after the admission.

Dr. McMullan:

And then most of the deaths occurred around three months or later than three months after the surgery. But there's not much information about what happened to those patients. Can you tell us about what the instance of residual lesions were in each patient population with a complication rate where the length of stay, the hospital mortality? And the reason I'm asking is because the data presented shows we have very long-term survival follow-up. But one question is this, are the patients receiving a better procedure in the DPC group? And that might be suggested if they have a shorter length of stay or a better hospital survival than if we look at the longer-term data.

Dr. Shi:

You mean survival or PPO?

Dr. McMullan:

What was the hospital survival for the two groups?

Dr. Shi:

Within 13 days.
Dr. McMullan:

What's that?

Dr. Shi:

If the patients died in hospital within 13 days, we define as in-hospital mortality or early mortality.

Dr. McMullan:

And was it the same between the two groups?

Dr. Shi:

Yes.

Dr. McMullan:

It was? And then finally, I was just curious if you could share with us why you think the patients who received very good cardiac-specific pre-surgical care have a lower rate of pulmonary venous obstruction a year later.

Dr. Shi:

From our data, we can see pre-surgical dedicated care facilities, higher CTA completion, which I think, from my perspective, CTA is very useful in ensuring better or detailed morphological information. This is very helpful for this can help the surgeons comprehend better for the morphological variation. And as you know, patients in TAPVR have a morphological heterogeneity in terms of the [inaudible] size, shape, or retention. Also, the position of relation with the left atrium, this is very important when we perform surgery to achieve surgical perfection. This may be the reason why there is a lower incidence in the DPC group.

Dr. McMullan:

Thank you very much. I enjoy the paper.

Dr. Shi:
Thank you.

Unidentified Speaker 1:

Before Igor comes to the mic, I have a quick question. So, CT is the only diagnostic test. That's the diagnostic test of choice for babies?

Dr. Shi:

No. No. I should clarify that. Echo remains the first major modality for diagnosis with TAPVR. However, in our institution, we cater an additional presurgical CTA.

Unidentified Speaker 1:

Thank you. Igor.

Unidentified Speaker 2:

Just briefly to emphasize one point for you and for the audience, your patients are preselected. Last time, I had a patient in Melbourne. The patient arrived on day one, crashed, was placed on ECMO, so preoperative dedicated care was very short and very intense. If somebody survives for two weeks and then arrives at the hospital, they must be in good shape already.

Dr. Shi:

Yes.

Unidentified Speaker 2:

Yeah. So, in the manuscript, you need to interpret this data as somewhat preselected patients.

Dr. Shi:

In those critical care patients, yes, I agree with Dr. Igor in those critical care patients, preoperative, maybe ECMO may be useful and should be initiated
when they are hemodynamic compromised. However, there are no such patients in this series.

Unidentified Speaker 2:

Okay. Thank you.