Discussion to: Outcomes of single versus multi-port video-assisted thoracoscopic surgery: data from a multi-centre randomised controlled trial of video-assisted thoracoscopic surgery versus thoracotomy for lung cancer

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Disclosures:

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Dr. Christopher Seder (Chicago, IL):

Dr. Lim, excellent presentation. Congratulations on carrying out this randomized controlled trial which-- got quite a difficult task to finish. Pain control and return to function are certainly important topics in thoracic surgery and these are important findings that you point out. In the manuscript, although this was drawn from a randomized control trial, you do point out that it was not powered to ask the question that you're addressing today. However, I think this is important and does add to our knowledge base. I have a few questions I'll ask one at a time. The biggest source of potential bias in this study, I think, is that one surgeon did 30 out of 42 of the single-port operations that were reported. That's over 70% by one surgeon, so are we really comparing one surgeon's outcome to a bunch of multi-port surgeons here?

Dr. Eric Lim (London, UK):

Okay. Guilty. Thank you very much for asking that question. Yes, I'm a single-port surgeon and it is an extremely valid question and that is exemplified by the direct comparison which has exactly the flaws that you've already mentioned. If the single-port surgeon is good at pain control, the thoracotomy would also be less painful and that's why we did the indirect comparison to try to get the ratios between surgeon A versus surgeon B rather than comparing A and B directly and in part hope to mitigate that issue.

Dr. Seder:

Sure. And the VIOLET trial was performed in an intention to treat manner where if a patient was randomized to the VATS arm, they got a thoracotomy, they would still be analyzed as a VATS patient. So presumably some of these single-port and multiport patients had a thoracotomy. Can you tell us-- there were, I believe, 14 thoracotomies that were performed in patients that were randomized to VATS. Can you tell us how many were in the single port and how many are in the multiport arm? Because I think this could potentially skew the results.

Dr. Lim:

Definitely. Thank you very much for explaining that. So, this is a per-protocol analysis which the opposite of intention to treat so the subgroup analysis, we specified that we would only analyze in patient who had completed either single or multiport surgery so there were no thoracotomy patients in those comparisons.

Dr. Seder:
Oh, very good. Okay. And I do think that chest tube dwell time matters when you talk about pain control. Do you have data on how long the chest tube stayed in each of the two arms?

Dr. Lim:

Yeah, well thank you for preparing your questions ahead of time and we are able to answer it very definitively. So, the median length of time for chest drain in single port was 2 days and the range was 1 to 5, and the median time for chest drain for multiport was also 2 days with a range of 1 to 4. 9.5% of single port patients were discharged with the drain compared to 10.8% of multiport discharged with a drain.

Dr. Seder:

Very good. Congratulations. Excellent study.

Dr. Lim:

Thank you very much.

Unidentified Speaker 1:

Great, we have time for one question.

Unidentified Speaker 2:

Thank you. Professor Lim, that was a really wonderful presentation. Two quick questions or maybe just one. How did you normalize the pain? And maybe you said that, but you said that there were different modalities and you normalized it per surgeon. How did you do that? And then you had physical function after one year, did you have any patients with post-thoracotomy or post-thoracoscopy pain in that one-year period afterwards? Thank you again.

Dr. Lim:

Yeah, thank you very much. So, the pain scores are the pain scores and what we did to normalize, also to compare the pain scores is to compare the analgesic ratios. So, if you have say a total of 3 mg of lidocaine in group 1 and a total of 4 mg of lidocaine in group 2 then that analgesic ratio will be 1.25. And then you
do the same for each and every medication going on, so you get an aggregate analgesic ratio and that's how we compared the two pain scores.

Unidentified Speaker 2:

But you couldn't compare say if someone took opiate by mouth versus EXPAREL by injection. Could you compare across the groups?

Dr. Lim:

So, in summary, you could, and it gets even more detailed than that because each opiate also has a coefficient on efficacy, and we also calculated--morphine is not the same as diamorphine. It is not the same as codeine and each one has a ratio and we adjusted for that as well. Coming back to your second question about prolonged pain. Yes, I believe the pain was about 5 to 15 percent but we haven't broken down the prolonged pain. We defined prolonged pain as pain after 5 weeks which was, in retrospect, not a good thing because a lot of patients were in pain at 5 weeks. With regard to that, we have that data, but we haven't presented it today.

Unidentified Speaker 3:

Yeah, [inaudible] Peters from Copenhagen. Excellent presentation and excellent study, I must say. Based on these data, what is the power calculation if you should do a randomized controlled study comparing the two procedures now?

Dr. Lim:

You ask a great question, and the honest answer is I don't actually know because you'll have to tell me what the actual meaningful reduction in analgesia use might be. So, if you say that the meaningful reduction in analgesic use is around 10% then we are not very far from that at about 150 patients, around that size. Thank you very much.

Unidentified Speaker 1:

Great, thank you.