Discussion to: Comparison of failure to rescue in younger versus elderly patients following lung cancer resection

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Discussion to: Comparison of failure to rescue in younger versus elderly patients following lung cancer resection

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None
Dr. Daniel Boffa (New Haven, CT):

I would like to thank the AATS for the opportunity to discuss this work, and to Dr. Wang and his colleagues for a great presentation and giving me access to the manuscript ahead of time. The concept of failure to rescue is interesting. It's designed to disentangle the prevalence of death after surgery accounting from the prevalence of complications or the outcomes of complication management. It's usually taken from the perspective of the hospital, but you're looking at patient attributes, so it's really failure to be rescued. The authors have found that in lung cancer patients who experienced at least one complication in NSQIP between 2011 and 2020, that the 326 patients who were 80 years of age or older were more likely to die within 30 days of surgery compared to those who were younger.

So, it is the art and the responsibility of researchers to tell the truest truth. And this can be challenging when, as you guys have done, you've approached the same question from different perspectives using predictive models based on various subdivisions. You've cut the pie up several times. So, when there's a failure to rescue, three things can be true. Either the people that are not being rescued are having more complex complications, more dangerous complications, or that cohort is more frail and is not tolerating the standard complications, or finally, the management of that cohort is not as effective. And that's particularly intriguing, as you mentioned, because the reoperation, which can be a management of complication, predicted a reduction in failure to be rescued. So, having looked at all this data, which of any or all of those three are contributing to the poorer outcome in the 80-year-olds?

Yoyo Wang (Ann Arbor, MI):

So, thank you for the great question. I think, looking at it, just sort of taking all factors into consideration, I think it's a little bit hard to discern exactly which one of those factors that you've listed is solely responsible for failure to rescue, given the fact that this is a retrospective study using a large sample size. Unfortunately, the NSQIP doesn't provide causality as far as what might cause the failure to rescue. But we do suspect that there is an interplay between all three of those factors that you mentioned, and probably in addition to that, there is some component of elderly patients having a lower physiological reserve, so they're probably unlikely to tolerate a postoperative complication as well.

Dr. Boffa:

So, you mentioned causation, and I think it is an important point here. And so, death documentation is notoriously inaccurate. In a study from our team, we noted that people who died within 90 days of cancer for lung-- sorry, surgery for lung cancer listed cancer as the cause of death in 57% of those patients, which probably wasn't true. So, how can you optimize the rescue attempt when
there's so much uncertainty about what patients are truly dying of? And are there opportunities to maybe make that better or clearer?

Mr. Wang:

Yeah, that's a great question. I think in terms of looking at death rates and sort of charting for death amongst these national cancer databases, there's a certain level of heterogeneity associated with different institutions in how they submit those records. I don't necessarily have a good answer for ways to correct that. But I think one way to evaluate this would be to lead a larger perspective study so that you can accurately track causality.

Dr. Boffa:

And finally, how does this factor in your decision-making for elderly patients? On the one hand, they seem to be at higher risk for death from complications. On the other hand, if you make it to 80, your actual life expectancy is like eight or nine years. So how do you factor this information and consult when you have a patient that's in this age range?

Mr. Wang:

So, I think that it would be important to just be judicious as far as who you are treating, just in terms of general practice, I think. Our study wanted to highlight this point, that for general thoracic surgeons who are very experienced at treating patients who have undergone lung cancer resection and have experienced these complications, having that experience is very beneficial for treating these postoperative complications.

Dr. Boffa:

Great. Thank you. Really, really great talk.

Mr. Wang:

Thank you.

[applause]
If I might, I have two pretty simple questions. You use NSQIP, and I'm curious why you wouldn't have used the STS thoracic database. And then unrelated to that, but importantly, I don't think any of us believe that before 80, you're okay, and after 80, you're not. What about just looking at frailty? Is that something that the teams talked about?

Mr. Wang:

Yeah. So, thanks for both questions. The first question is the reason that we use NSQIP is we felt that there was a better level of granularity when it came to patient-specific data. And the STS was definitely something that we were considering. I think we ended up choosing the NSQIP because of that increased granularity. And as far as the second question, with regards to frailty, that's definitely something we would have wanted to look at, but I think just given the limitations of the NSQIP database, there was no information or data on frailty or pulmonary function.

Unidentified Speaker 2:

I have a question regarding your prevention from adverse outcomes related to your re-intervention. In congenital cardiac surgery, we've demonstrated that re-operating for residual lesions, for example, is preventive of adverse outcome, death, and complications. I think that that's really interesting. And I think if you can expand a little bit on the potential for using similar metric in thoracic surgery for certain complications, like air leak, for example.

Mr. Wang:

I'm not entirely sure as far as what metric that we would necessarily be able to use to determine when to re-intervene. Might defer that.

Unidentified Speaker 3:

Maybe I can add some perspective. Doug Lu from Stanford. Very nice job, Yo-yo. Our original intent was actually to look at where there's specific re-operations. Once we found those associates, to look at whether specific re-operations related to specific complications. That might help us tease out that answer. We weren't really able to find any part of it was related to the coding. There were over 180, 190 different CPT codes for 900 re-operation procedures, and so it's very difficult to kind of group them together. So, we weren't able to really find any associations.

Unidentified Speaker 2:
Maybe institution-specific. We look at that, and then potentially to apply prospectively might be interesting.

Unidentified Speaker 3:

Right. I think the biggest thing here that was brought up was that prospective data was really needed to really tease out causality, what was the decision-making process at the time of the complication, and then to kind of sort through how patients could be better rescued.

Unidentified Speaker 2:

Thank you.

Mr. Wang:

Great.

Unidentified Speaker 2:

Excellent presentation.

Mr. Wang:

Thank you.

Dr. Boffa:

Yes, I was going to say, Yo-yo, for a third-year medical student, incredible job.

[applause]

Mr. Wang:

Thank you so much.

Dr. Boffa:
Maybe even for somebody as old as I am, great job. So, I'm incredibly impressed.