Discussion to: Delays to Surgery and Worse Outcomes: the Compounding Effects of Social Determinants of Health in Non-Small Cell Lung Cancer

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Dr. Thomas Varghese (Salt Lake City, UT):

Good morning, everybody. I wish to thank the ATS for the privilege of discussing this important study. And a special thanks to the authors for sending the manuscript and a copy of your slides ahead of the meeting. So, when you look out there on the Internet, depending on which organization you find, you find that there are around 60 formal definitions of quality. And it all boils down to one core component. Are we doing a good job in a way that can be measured? Historically, most of the focus has been on three domains. Is the treatment effective? Is it safe? Is it patient-centered? But there are really three other domains that we've kind of neglected. And those come down to, is it timely? Is it equitable? Is it efficient? Access to quality care is a critical component of comprehensive surgical lung cancer management. We sadly have decades worth of literature that demonstrate that inadequate access to quality care has been the norm for minorities, the uninsured or underinsured, and those in low socioeconomic status. In this large retrospective cohort studied 110,000 patients using the national cancer database, fourth-year medical student extraordinaire, Arman Ashrafi, senior author, Dr. Tony Kim, and the team demonstrate the following, that there is a three-way interaction between race, insurance, and facility type that contributed to a delay in time to surgery. And even more importantly, that the 15-day additional surgical delay led to a 4%
hazard, decreased 5-year survival, 5% odds increased 30-day mortality, and 6% odds increased 90-day mortality. I have four questions, two of which are quick technical ones, but the first one is in your control group, you have a 44-day average time to surgery. Some would say that this itself is too high. So, in the modern era, what is your opinion on the statement, we're doing a crappy job for everybody, and that the additional crappiness we're doing for minorities, the under- or uninsured, and academic medical centers is really making things worse.

Dr. Arman Ashrafi (Los Angeles, CA):

Thank you for that great question. I would agree with that statement. I think it's challenging because, as you mentioned, it's hard to develop a set of guidelines without a consensus in terms of template, how we can compare different institutions, given the variance between them all. For example, the British [inaudible] society identifies an ideal time-to-surgery of 8 weeks, 56 days. The Rand Corporation has 6 weeks, which is 42 days. Based on those metrics, 44 may not seem too long. And so, the notion of, we need to do a better job in providing timely care to patients, I think it's a very profound one. And an attempt to use quality metrics, for example, to better define how we can compare and establish clear goals for us as surgeons as a very guarded community in treating these patients.

Dr. Varghese:

Perfect. Thank you. Two quick technical questions. So, you analyzed average time-to-surgery rather than median time-to-surgery. What was your rationale for this?

Dr. Ashrafi:

In our statistical analysis, we ended up using a negative binomial regression given the larger sample size. And with that analysis, median time-to-surgery was the ideal outcome, opposed to a quantile regression where median was an option.

Dr. Varghese:

Good. And another quick technical question is, why did you only look at lobectomy and pneumonectomy? What about stratifying across all the different types of resections? Lobectomies, bilobectomy, pneumonectomies, sublobar resections?

Dr. Ashrafi:
Sure. That’s a great question. When we first decided to study this topic, we were curious about the same question. And ultimately, given the clinical database we used, NCDB, the clinical rationale piece as to why patients may undergo a sublobar resection, for example, was not easily identifiable. Whether they’re medically less fit, whether it was in noncurative [inaudible] resection. And in an attempt to create a more homogenous pure surgical cohort, we opted to exclude the sublobar resections.

Dr. Varghese:

Fair enough. And then the final question, and you can call a friend. You can call Tony up to the stage to answer, this was more of a kind of speculated type of thing. Now, considering the findings from your paper, obviously, the question is, what do we do next? So, there are two different approaches that’s cited in the literature. So, one approach is in January 2023 in a JAMA surgery paper, Brendan Heiden, Varun Puri, and the colleagues at Wash U advocated for a treatment center-specific approach. This is done for all patients in which that there needs to be focused on five surgical quality metrics, including performing surgery in a timely manner, determining the appropriate amount of lung tissue to be resected, sampling multiple lymph nodes, confirm that the cancer's staged correctly, using a minimally invasive approach to minimize pain and ensuring an R0 resection. So that’s one approach. The second approach was in 2019, there was a pragmatic quality improvement trial of 302 patients called ACCURE, which is Accountability for Cancer Care through undoing Racism and Equity. And this was led by Doctor Marjory Charlot investigators at the University of North Carolina. So, what they did is they approached one specific minority group, specifically black patients in their center. And what they did is they focused on that specific group and tested the impact of a real-time notification in their electronic medical record triggered by missed clinic appointments, dashboard reporting of race-specific treatment rates to the clinical teams, and the use of a nurse navigator. Thinking about what you’re doing, which approach do you think would be best? Do we need to do both? Should we do one size fits all or should we be targeting specific demographic groups? And like I said, you can call Tony to the stage if you need some help.

Dr. Ashrafi:

I'll take a first pass at that question. Thank you so much for that. It was very interesting. I would think a combination is a short answer to that. I would start off by saying the notion of creating a more tailored approach would definitely be one way to address the disparities we saw in this study here. The care navigator, for example, to help address patient access. The notion of educational materials for patients to address some lower education, for example, daily templated workup for patients as a way to increase time to surgery. So, I think ways to develop a more targeted approach may help immediately identify the disparities. On the other hand, the notion of having five quality metrics may be one way we can move forward in identifying a
guideline or a best practice if we can use it as a starting point. So, both is my answer to your question.

Dr. Varghese:

Great job.

Unidentified Speaker 1:

We have two minutes. I want to make sure we have some questions from the floor.

Dr. Varghese:

Thanks so much.

Dr. Ashrafi:

Thank you.

Dr. Michael Bousamra (Detroit, MI):

Hi, Michael Bousamra, Ascension Health Michigan. I practice in the metro Detroit area and experience the difficulties that people of lower socioeconomic ability have. One of the problems that I've recognized is a lack of prioritization of lung cancer patients. In this day and age, there's so much under volume of staff to do PET scans, to do PFTs, and that sort of thing that lung cancer patients need to be prioritized. And that's not routinely done, at least not in my community. The other thing that I've noticed is that the major blocks seem to be the logistic and transportation difficulties that people of lesser means have. They have to get-- to get a poor person to have multiple tests done within 45 days is a big achievement. So, we need to work on being able to do that better. And then lastly, I've noticed that patients with pulmonary nodules or suspicious lesions also have a very significant time difference between when they're recognized and when they're actually diagnosed. You're looking at the time from diagnosis to treatment, but another big problem is the time from recognition of a problem or when it should be recognized to the time of diagnosis. Thanks.

Unidentified Speaker 1:
So, unfortunately, that's the time for our last statement. I do want to make one point about your data that we don't gloss it over. So sure, you have compounding effects of race, insurance status, and academic medical center. But from my understanding, for black patients who had private insurance and went to an academic medical center, they had a statistically longer time to surgery than the reference cohort?

Dr. Ashrafi:

Correct.

Unidentified Speaker 1:

So basically, patients like me, right, who drives a Tesla and went to the Lakers Warriors game last night have a statistically longer time to surgery. So, I think we need to let that sink in. It's not always patients who lack means or are socioeconomically disadvantaged. The variable of race, regardless of economic status, led to a delay in surgery. Is that correct?

Dr. Ashrafi:

That is correct, yes.

Unidentified Speaker 1:

Thank you very much. A wonderful presentation.

Dr. Ashrafi:

Thank you.