Discussion

Presenter: Dr Zaid Muslim

Dr Cherie Erkmen *(Philadelphia, Pa)*. I'm interested in this work because we know that we have disparities. We know, even though we have technology and innovation, that we are not delivering the standard of care to many people based on disparities. So, we know in lung cancer, we're looking at later diagnoses, we're looking at worse outcomes and overall poor mortality. But most of our studies are looking at the individual level or at the provider level. I commend you and your co-authors for really looking at the institutional level because this is a knowledge gap among us. That being said, I'd like to compliment you on the idea of getting 88,000 patients and 1300 institutions. These are powerful data. I have 3 questions for you. One of them is in regard to the comorbidities. So, you did do a comorbidity index and an analysis of that. How can you separate out the individual factors in comorbidities in people at low-resourced institutions having more comorbidities? How do you separate out the providers who you showed have a propensity to do open procedures in positive margins and inadequate lymph node dissection? How can you make a generalization about the institutional level when you have those other factors that are so powerful?

Dr Zaid Muslim *(Danbury, Conn)*. Essentially, the problem that we face is that there are a combination of patient factors, facility factors. You mentioned the patients at these higher-burden centers are more likely to have more comorbidities, and that may not be down to the institution. That may just be the nature of the patient population that they face. I think this indicates to bigger problems in the healthcare system that these patients, for whatever reason, for maybe lack of follow-up, lack of healthcare access, do have unresolved or comorbidities that are not addressed. And that effectively impacts our outcomes when we look at these kind of data. So, I think we can try and control for that in our multivariable models, but with the NCDB, to a great extent, we're limited to what we can control for. We did look at facility volume, facility region, facility teaching status on the facility level and comorbidities, race, insurance status, income on the patient level. But I think further studies are needed to pinpoint which factors are responsible for these outcomes.

Dr Erkmen. I have a question about how you stratified the institutions into low, middle, and high. How did you get a significant difference between just the very slight number of Medicare, Medicaid, and uninsured patients? The differentiation is between 8% and 12%, but you still found a significant difference. What would you say is accounting for that? How will you account for institutions like mine that have 75% to 80% of people who are underinsured and poorly insured?

Dr Muslim. Sure. I think that's a good question and something that we've given a lot of thought to. I think the logic behind categorizing them this way was again splitting the distribution into an equally spaced threshold just to generate 4 comparison groups that represent the spectrum of hospital burden. As to why there's a significant difference with such a small difference in the percentage of uninsured patients, it's a good question. I think we certainly see that patients on the extreme ends of the spectrum have a greater magnitude of differences in outcomes versus the patients who are closer together on the distribution. So essentially, there is a pattern of or a relationship that appears to be between hospital burden and outcomes. But again, the study does a better job of outlining that there is a potential problem. Essentially, we need more granular data and more prospective studies to hone in on why that is.

As for your second part, the hospitals with the larger percentage of uninsured or underinsured patients, we need to recognize that not all hospitals are the same. I think it's easy to extrapolate from this data that we're generalizing and calling all high-burden hospitals bad, but even high-burden hospitals can have good outcomes. And we saw in our study that academic hospitals are more likely to be high burden, but we also saw in our study that they're more likely to have better outcomes. So, that clearly shows that in academic hospitals, there are characteristics and qualities that allow them to have better outcomes despite seeing a large number of underinsured or uninsured patients, and we need to study why that is. I think it's an interesting point to consider.