SPEAKER 1: So the question comes up, what is the appropriate use of amikacin? And the answer, like most answers regarding NTM disease is a little ambiguous. As I indicated, in patients who have cavitary disease, in patients who have significant clinical symptomatology-- extensive fever, weight loss, et cetera, the appropriate use of amikacin might be at the very onset of disease, at the very onset of the treatment. That's not very common, but it's certainly an option that one needs to consider.

And certainly, as I've indicated, the success rate in guideline-based treatment without amikacin is about 55%. So there are many patients who, after 18 months, would clearly require a different treatment, which would likely include amikacin. So whether amikacin is considered as part of the treatment of clinically severe disease, failure to respond clinically, or failure to respond microbiologically, the considerations that one needs to consider are a set of issues that I'd like to address.

Specifically, amikacin is a drug that has to be given intravenously. So right away it's a big change, as opposed to the rest of the guideline-based treatment, because the rest of the guideline-based treatment is oral. And now with intravenous, there a lot of logistic problems that need to be addressed. And so it's a problem from a simply administration of drug point of view.

It's also a problem with toxicity, because amikacin is quite toxic, particularly with ototoxicity and nephrotoxicity. And we learned over the years that by measuring drug levels of the drug-- peak and trough, particularly the trough-- that you can minimize these symptoms, but they still occur, sometimes even when the drug levels are within appropriate guidelines. So the availability of inhaled amikacin has been a wonderful boom that, frankly, I used before the liposomal amikacin was available. Just used amikacin in the formulation that was prepared for intravenous, gave it by nebulization, and had pretty good luck with it.

However, with the availability of liposomal amikacin, things have changed quite a bit. The drug has become commonly available, is approved by the FDA, and has been demonstrated with good clinical studies to be efficacious. And not only that, there are histologic studies that show that the drug delivery to the lung when inhaled is as good or better than the delivery of the drug to the lung with intravenous usage.

So you could ask the question, why would you ever use intravenous? Then, I'm not sure what the answer is, because liposomal amikacin is a great new option that we have available. And quite frankly, we're still figuring out how to use it. Yeah, there are guidelines, but those guidelines are not set in stone, they're still under development. And clearly, amikacin is indicated for clinical failures, for microbiological failures, and for patients who have severe disease with a high risk of failure.