SPEAKER 1: It may be intuitive that if you're growing mycobacteria in a culture from the lower airways, that it should warrant treatment. Obviously, the organism does not belong in the airways. Perhaps the patient has symptoms. Why am I not just treating that patient? And there are several reasons why we don't move directly to treatment and why we devote such careful attention to trying to establish a diagnosis and a reason to treat.

The first of these is that in some patients we find evidence of mycobacteria, and yet, they are completely asymptomatic. For example, a patient gets an X-ray done for some other purpose, is found to have findings, which leads to a CT scan, and then, perhaps bronchoscopy, and we identify Mycobacterium Avium or MAC. But the patient doesn't cough, doesn't have sputum production, has just mild changes on the CT scan, and so you're trying to decide what is the evidence that treatment is actually going to improve this patient's life?

The second is that even in those patients that we have decided need to be treated, and that we initiate therapy in those patients, and with good therapy, and even if the patient improves symptomatically, we don't eradicate the infection. There are many patients in whom we will continue to grow the organism. And so although our goal is to eradicate the infection, we have to accept that in some patients that may not be possible.

And like all medications, the antibiotics that we use come with baggage. They come with the potential for adverse effects. And so if a person isn't sick, we certainly have the ability to make someone sick. So we want to have a compelling reason by which to treat someone.

So when I see a patient in the clinic that I feel I'm not yet ready to tell them that we think treatment is warranted, I also tell them that I reserve the right to change my mind. And what I mean by that is maybe I don't have sufficient evidence at the moment to be comfortable recommending therapy, but if we observe the patient for a period of time, then it might become more evident to us that therapy is, in fact, warranted.

Now, what we would be looking for in that setting is whether there is progression of the disease, either by worsening of symptoms, development of symptoms, or change in the X-ray. And so at the very beginning, when we're really trying to understand what evidence there is to support NTM lung disease, we're trying to describe their clinical symptoms at presentation and historically so that we can also then try to see if these symptoms are persisting, or worse, or as I said earlier, nonresponsive to treatment of other conditions.

And then radiographically, has there been a change that would suggest the disease is progressing? Now, clearly a patient who has cavitation, that is evidence that there is progressive disease, and that would be an early reason to recommend treatment. But in a patient who has nodules, or just nodule bronchiectasis, we might look for additional changes, such as progression of the bronchiectasis, new nodules, or hopefully not, but evidence of a new cavity starting to form.

The challenge is knowing when to do that repeat CT scan. And there isn't good evidence to tell us exactly when that would be. It's not sophisticated to the point we have, for lung nodules, worried about lung cancer. But in general, maybe anything less than three months is too soon, six months might be the sweet spot, and for other patients maybe not going longer than a year to make sure there has been no progression. Or certainly repeating that imaging if a person has new findings, such as hemoptysis, that might change your approach.