

**SPEAKER:** The use of amikacin has long been used, especially for MAC lung disease. Many practitioners, quite frankly, are concerned about using it due to hearing loss and the risk of kidney injury. I use it commonly in my practice.

When do I use it? Well, first of all, when I see a patient-- again, with cavitary lung disease or very severe disease that's been treated multiple times-- I'll use this as an up-front medication in combination with oral drugs. For cavitary disease and MAC lung disease, I give IV intravenous amikacin three times a week.

The dosing is recommended in the guidelines. I think that in the United States, we don't know the exact optimal dose for intravenous amikacin. Some practitioners will start at 7 milligrams per kilogram three times a week and check peak [INAUDIBLE]. Others will start at 10 to 15 milligrams per kilogram three times a week and monitor the levels in the same way.

I reach for this initially frontline, again, when I see really bad radiographs and very severe disease. But I also think about intravenous amikacin-- and actually, inhaled amikacin-- when I see people with disease that does not respond to oral drugs. After patients have been on therapy for six months, we consider that they're refractory, meaning you're continuing to check sputums, but they remain positive for MAC despite good oral medication according to the guidelines.

At that point, you're left with kind of a decision-making tree of what to do next-- how to change therapy to increase your chances of culture converting them and improving their outcome. Intravenous medication like amikacin has historically been added. We have also used off-label inhaled amikacin. Patients actually just draw up the amikacin in a vial and put it in their nebulizer. And we have multiple studies, very small case studies, looking at the efficacy of that.

And then recently, of course, the published paper using liposomal amikacin called ARIKAYCE for use in these types of patients has certainly gained a lot of attention. That study looked at using this inhaled amikacin daily via a liposome in a large study, actually, that occurred worldwide with more than 200 patients. And what was found was that when you added this inhaled drug to guideline-based therapy in patients that were still culture positive at six months, that patient's sputum converted about 29% of the time.

So those were very promising results. And I think that we're seeing liposomal amikacin or ARIKAYCE used in more patients. And I think that we'll see more studies come out in the future about really how to optimize this drug and how to better understand-- perhaps even how to use it earlier in MAC lung disease.