Transcript Details
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Advancing MPE Diagnosis and Prognosis: Clinical Value of Biomarker Integration

Announcer:
You're listening to *Clinician's Roundtable* on ReachMD. On this episode, we'll hear from Dr. David Feller-Kopman, who's a Professor of Medicine at the Geisel School of Medicine at Dartmouth and the Chief of Pulmonary and Critical Care Medicine at Dartmouth-Hitchcock Medical Center. He'll be discussing the role of pleural biomarkers in malignant pleural effusions, which he spoke about at the 2025 CHEST Annual Meeting. Let's hear from Dr. Feller-Kopman now.

Dr. Feller-Kopman:
I would say, typically, the most common way to diagnose a malignant pleural effusion is with a thoracentesis. The problem with thoracentesis in the diagnosis of malignant pleural effusion is that the sensitivity of cytology on the first tap is only about 60 percent. That can increase on subsequent thoracentesis, but of course, that involves additional invasive procedures and additional visits to the doctor, and during that time the tumor is growing, and the patient isn't receiving therapy.

So, barring thoracentesis, the next best way is with pleural biopsy, and that could either be done with a transthoracic cutting needle biopsy, or what's commonly done is thoracoscopy—either medical thoracoscopy or video-assisted thoracoscopic surgery—basically the same procedure where a small incision is made, and you go into the chest cavity with a camera, actually take some larger biopsies, and send to pathology. Clearly, the problem with that is that it's a more invasive approach. Many centers in the world do these under local anesthesia. However, in the United States, most of those procedures are done under general anesthesia, so it would be great if we could somehow increase the diagnostic sensitivity of that first thoracentesis.

There are several reasons that we need biomarkers. It would be great to potentially use biomarkers to help us prognosticate how patients are going to do with their malignant pleural effusion and potentially also be able to monitor a response to treatment. So one of the questions in terms of prognosis is, why do we need a biomarker? Aren't clinicians good at estimating how long a patient's going to live? And it turns out that we're not that good. There are several large randomized trials where, in order to get into the trial, you needed a predictive survival of over three months. Unfortunately, in one of these trials, 17 percent of patients died within 30 days, and in another one of these trials, 34 percent died within three months. So we're not that good at predicting survival based on our clinical gestalt.

So in terms of prognostic biomarkers, there are a couple of nice trials out there, and the first one was what's called the LENT trial. This was done by Clive and colleagues in England, and they looked at close to 800 patients in three international cohorts. And using the pleural fluid LDH, the ECOG performance status, the serum neutrophil to lymphocyte ratio, and the tumor type, they were actually really nicely able to stratify those who had a very poor prognosis and those who had a decent prognosis. There is, of course, a middle group where we weren't really able to understand how those patients would do, or they would do somewhere in between the good prognosis and the poor prognosis group.

And then subsequently, there's a trial by Dr. Psallidas and his group—what's called the PROMISE trial—where they used clinical radiologic and biologic variables to help risk stratify patients. And they likewise showed four categories, one where the three-month mortality was less than 25 percent, and another had three-month mortality at more than 75 percent. So you could predict the patients who are going to do okay at three months and poorly at three months. And I think both of these are actually quite helpful right now, at least for identifying patients who are not going to do well because then it helps us as clinicians identify optimal treatment strategies.

In terms of diagnostic biomarkers, there are many that have been looked at, including CEA, CA119, and mesothelin. And right now, at least, we don't have a "true biomarker" that really increases the diagnostic yield, except for perhaps some biomarkers that might help us

diagnose mesothelioma, which can be very tricky to diagnose just based on cytology. We really do need tissue biopsy to help us diagnose mesothelioma.

Announcer:
That was Dr. David Feller-Kopman discussing his session at the 2025 CHEST Annual Meeting on pleural biomarkers in malignant pleural effusions. To access this and other episodes in our series, visit *Clinician's Roundtable* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!