

*ASHPOfficial- Therapeutic Thursdays: A conversation about the new 2019 Community Acquired
Pneumonia Guidelines
Transcription*



- Announcer: Welcome to the ASHP Official podcast, your guide to issues related to medication use, public health, and the profession of pharmacy.
- Katelin Lisenby: Thank you for joining us for Therapeutics Thursdays podcast. This podcast provides an opportunity to listen in as members to sit down to discuss what's new and ongoing in the world of therapeutics. My name is Katelin Lisenby. I'm an assistant clinical professor at Auburn University Harrison School of Pharmacy in Tuscaloosa, Alabama. I will be your host today for the ASHP Therapeutic Thursdays podcast.
- Katelin Lisenby: With me today is Kady McLean, and she is a PGY1 pharmacy practice resident at DCH Regional Medical Center in Tuscaloosa, Alabama. Thank you for joining us today, Kady. So let's go ahead and get started about today's topic, which is the new 2019 Community Acquired Pneumonia Guidelines. So how should we determine whether or not patients should be hospitalized for pneumonia under these new guidelines?
- Kady McLean: Yes, so they've always recommended using an objective scoring system along with clinical judgment in determining patients that need to be hospitalized versus those that can be treated outpatient.
- Kady McLean: The previous guidelines back in 2007 recommended using the CURB-65 criteria and the Pneumonia Severity Index or the PSI equally. Those are the two main scoring systems we use right now, but the new guidelines now prefer using the PSI over the CURB-65 because multiple studies have found that using the PSI actually increases the proportion of patients that we can safely treat outpatient.
- Katelin Lisenby: Well, that's really helpful to know. Is there a time where the PSI may not be as useful?
- Kady McLean: There is. So the PSI can underestimate illness severity in our younger patients because a major part of the score is actually a patient's age, so the score will be quite different in a patient that's 30 years old versus a patient that's 70 years old. So that's why they recommend using the PSI together with clinical judgment. Another reason may be if a patient can't tolerate an oral medication, then they probably won't be able to be treated outpatient.
- Kady McLean: The authors also recognize that the CURB-65 is a much simpler tool, so they did give it a conditional recommendation. However, they would prefer using the PSI as that has the strongest recommendation.
- Katelin Lisenby: Okay. So what about assessing severity of illness and location of admission? When should patients be admitted to an intensive care unit?
- Kady McLean: Right, so the PSI and the CURB-65 are useful in determining hospitalization or not, but you can't really use them for deciding whether or not a patient needs more intensive care. So these are similar to the past guidelines. Patients should be directly admitted to the ICU if they have hypotension requiring vasopressors or respiratory failure requiring mechanical ventilation. Now for patients that don't meet criteria, they suggest using the validated



IDS/ATS severity criteria, specifically the minor criteria. And these are a long list of lab values, vital signs and physical exam findings that were published in the 2007 guidelines.

Kadyn McLean: Basically, the previous guidelines said if they met three or more of the minor criteria, then they recommend direct admission to the ICU. These new guidelines back off of that a little bit. They've made that a conditional recommendation and they recommend using that along with clinical judgment. And part of that I think is because some of these criteria are the things like thrombocytopenia and general confusion, and a patient may just have that at baseline. So they're recommending to only use that along with clinical judgment.

Katelin Lisenby: So Kadyn, what are the new recommendations as far as outpatient management?

Kadyn McLean: Yeah, so the biggest change with these new guidelines are going to be with our otherwise healthy patients without comorbidities. And that is that macrolide monotherapy is no longer a strong recommendation. That's because of increased resistance with Strep pneumo. The macrolide resistance with Strep pneumo is now widespread across the US. There are resistance rates across the country of greater than 30%. Here in Alabama, our resistance rate is actually 67%. So it's not doing well.

Kadyn McLean: So they're now recommending using high dose Amoxicillin monotherapy. That's actually their strongest recommendation right now. That's one gram three times a day. Another alternative would be Doxycycline, but the Amoxicillin is the strongest recommendation.

Kadyn McLean: That was previously only recommended in combination with the macrolide in our patients with comorbidities, but they're now recommending monotherapy based on several studies that have shown it to be effective in inpatients with CAP, even though it lacks coverage for atypicals. The recommendations as far as patients with comorbidities haven't really changed. They're still going to be a beta-lactam plus a macrolide or a respiratory fluoroquinolone.

Katelin Lisenby: So Kadyn, is there a time when macrolide monotherapy would be acceptable?

Kadyn McLean: Yes, they do say you can use the macrolide monotherapy if local pneumococcal resistance rates are less than 25%. However, nowadays this is going to be very uncommon, but that would be the only time it would be acceptable.

Katelin Lisenby: Okay, so now that we've covered the updates in inpatient management, what are the newest recommendations as far as, I'm sorry, excuse me, outpatient management, what are the recommendations as far as inpatient management?

Kadyn McLean: Yes, so the biggest change as far as inpatient management is that therapy is now based on whether or not the pneumonia is considered severe or non-severe instead of using ICU versus non ICU. So the previous guidelines made their recommendations based on whether or not the patient was in the intensive care unit. However, the new guidelines recommend using the validated IDS/ATS severity criteria, and they base their recommendations on whether or not the pneumonia is non severe or severe. The idea behind that is that decisions regarding the site of care can be based on many other factors other than just the severity of the illness,



and they can vary widely among institutions. So patients could be in the ICU for any number of reasons other than their pneumonia.

Kadyn McLean: The only other change is that in our severe patients, there's slightly stronger evidence now in favor of the beta-lactam plus macrolide combination over the beta-lactam plus a fluoroquinolone. And that's just based on a meta-analysis that found that macrolide containing therapies in our critically ill CAP patients were associated with a significant reduction in mortality compared to therapies that didn't have macrolides. However, both of these combinations are still recommended. The evidence is just a little bit stronger with the beta-lactam plus macrolide.

Kadyn McLean: Overall therapy for non-severe patients remains the same. It's going to be a beta-lactam plus macrolide or respiratory fluoroquinolone.

Katelin Lisenby: So Kadyn, what is said in regard to the status of healthcare associated pneumonia?

Kadyn McLean: Yes. So these guidelines talked about Healthcare Associated Pneumonia or HCAP, and they said that this category is officially abandoned. This is already somewhat addressed in the latest HAP/VAP guidelines because they excluded HCAP and basically passed it off to being addressed in the newest CAP guidelines since patients with HCAP typically do present from the community.

Kadyn McLean: But the idea behind abandoning it, is that studies have demonstrated that the factors used to define HCAP, things like residents in a nursing home, or chronic dialysis, home infusion, wound care, that kind of thing, they don't actually predict a high prevalence of antibiotic resistant pathogens in most settings. And they've actually seen an increased use of broad-spectrum antibiotics without really an improvement in patient outcomes. So basically, HCAP is no longer a category. We no longer need to cover for MDR pathogens in those patients. So pneumonia will now be classified as either being CAP, or HAP, or VAP, but no HCAP.

Katelin Lisenby: Okay. That seems to be a big update from the 2007 guidelines. So when do we know to cover for MRSA, or Pseudomonas, or other MDR pathogens?

Kadyn McLean: Yeah, so coverage for those pathogens, they're now recommending they be based on locally validated risk factors. So there's not really any validated scoring systems that we can use to help us identify patients with these pathogens. So they're now suggesting to get local data on MRSA and Pseudomonas prevalence and what their risk factors are at your local institution.

Kadyn McLean: So that's going to involve documenting patients that do have confirmed MRSA or Pseudomonas and comparing that with your total number of patients with CAP, and also trying to determine what their risk factors are for those. So that's probably going to be a great residency research project for next year if anyone is interested in that. Because most institutions currently don't have that data, so in the meantime they're just recommending using more general risk factors. The strongest risk factor is going to be a prior isolation of one of those organisms, especially respiratory isolation. Another risk factor is recent hospitalization and exposure to IV antibiotics typically within the last 90 days.



- Kadyn McLean: So if a patient has prior isolation of one of those organisms, they're recommending to go ahead and add coverage and then get cultures to see if you can deescalate or not. But if they've been recently hospitalized and exposed to IV antibiotics, the recommendations depend on whether or not the pneumonia is non-severe or severe. If it's non-severe, you can get cultures first and only add coverage if necessary, but in severe we want to go ahead and add coverage in those patients and then get cultures to see if we can deescalate.
- Katelin Lisenby: Okay, so what about the nasal screen for MRSA?
- Kadyn McLean: Yeah, so luckily we do have a nasal screen for MRSA and they do recommend utilizing that along with getting cultures. The nasal screen has an excellent negative predictive value, so if it comes back negative, you can generally withhold or even stop MRSA coverage if it's already been started.
- Kadyn McLean: The positive predictive value is not really as high. However, they do say in these guidelines to go ahead and add coverage if that nasal swab is positive and then get cultures to see if you can deescalate. And they recommend de-escalation at about 48 hours, if cultures are negative and the patient is improving. They found that that is safe. It reduces the duration of antibiotic therapy as well as complications that come with using broad spectrum antibiotics and it can also decrease our overall length of hospitalization. So de-escalation is definitely important.
- Katelin Lisenby: So Kadyn, you mentioned some instances when culture should be drawn. When exactly is it recommended that we draw cultures?
- Kadyn McLean: So in these new guidelines they're recommending getting blood and sputum cultures only in patients with severe CAP or our patients that are being empirically treated for MRSA or pseudomonas or have one of those risk factors, which are being previously infected or recently hospitalized and receiving IV antibiotics.
- Kadyn McLean: The past guidelines only recommended in severe CAP. The new guidelines added the recommendations concerning MRSA and pseudomonas mostly for stewardship purposes and also to aid clinicians in determining those local risk factors and prevalence. We don't want to get cultures from just everybody. Blood cultures have actually been associated with an increased length of stay and duration of antibiotic therapy in patients hospitalized with CAP.
- Kadyn McLean: Kind of the reason for that is that the more blood cultures we get then we may have the more risk of skin contaminants that produce false positives and that can lead to excess antibiotic use. Also, the overall yield of blood cultures in pneumonia is quite low, especially in non-severe. It's only about 2-9% so they're really not helpful most of the time.
- Kadyn McLean: And then with sputum cultures, they can be quite challenging. It's typically hard for patients to produce a good sputum culture, so we don't want to make everyone have to do that. But they do say in patients with severe CAP, if they're intubated, they should have a lower respiratory tract sample sent for culture quickly after intubation. Those patients are more



likely to have an MDR pathogen and those lower respiratory endotracheal aspirates typically have a better yield than our general sputum cultures.

Katelin Lisenby: So Kady, what do these guidelines say in regard to aspiration pneumonia?

Kady McLean: Yeah, so the new guidelines actually suggest not routinely adding anaerobic coverage for a suspected aspiration pneumonia unless a lung abscess for empyema is suspected. This is kind of briefly mentioned in the body of the previous guidelines. They mentioned that the need for anaerobic coverage in CAP is genuinely overestimated and the idea of even covering for anaerobes comes from some studies that were done back in the 70s. They showed high rates of anaerobes in aspiration pneumonia.

Kady McLean: However, the patients they looked at were later in their disease course and they used different kinds of sampling back then. So it's not quite as relevant to us today in our treatment. So the new recommendation comes from more recent studies that have been done of acute aspiration events in hospitalized patients and they actually suggest that anaerobic bacteria don't really play a major role. However, these are smaller studies and there haven't really been any large clinical trials comparing treatment with or without anaerobic coverage. So this is a conditional recommendation and they do suggest more research is needed in this area.

Kady McLean: However, with increasing rates of *C. Diff* infections as well as increased antibiotic resistance, it is really important that we avoid the unnecessary use of antibiotics if at all possible. So that's part of why they've made this recommendation.

Katelin Lisenby: Absolutely. Well, Kady, this has been a great update on the new community acquired pneumonia guidelines. Were there any other new recommendations that would be important to mention?

Kady McLean: Yes, so they did briefly mention the use of corticosteroids. They recommend not routinely using corticosteroids in non-severe CAP and they suggest not routinely using them in severe CAP. And that's due to limited data suggesting benefit.

Kady McLean: There have been some studies that have shown a mortality benefit in severe CAP, but they also found major side effects such as significant hyperglycemia requiring therapy and also increased rates of secondary infection. They do say that they endorse the Surviving Sepsis campaign recommendations on the use of steroids in patients with septic shock that's not responding to any fluids or vasopressors and they say that this recommendation doesn't override a clinically appropriate use of corticosteroids for a different disease state. For example, if you have a patient come in with pneumonia and a COPD exacerbation, you can still use the steroids in that case.

Katelin Lisenby: Okay. And with the increased focus on procalcitonin and antibiotic utilization, was there any mention of procalcitonin and CAP?

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- Kadyn McLean: Yes, they do briefly mention it. They say that they recommend empiric antibiotic therapy be initiated in adults if they have clinically suspected and radiographically confirmed CAP regardless of their initial procalcitonin level.
- Kadyn McLean: They've done several studies trying to identify a procalcitonin level of that can distinguish between a viral and bacterial infection. However, the studies so far have failed to actually do that. And the sensitivity of procalcitonin to detect a bacterial infection is somewhere between 38% and 91% so it really shouldn't be used alone to withhold antibiotics. We can't use the level alone to say, "Oh, this is a viral pneumonia. We don't need any antibiotics." They don't really make any recommendations as far as using procalcitonin to guide treatment once it's been initiated. They really just mentioned it as far as trying to use it to distinguish between viral and bacterial.
- Katelin Lisenby: Okay. And then speaking of viral with flu season in full swing are there any updates concerning influenza in CAP?
- Kadyn McLean: Yes, they state that if the flu is clinically suspected, go ahead and test for the flu and if that comes back positive then to co-treat with both an antibiotic and oseltamivir and that's going to be regardless of the duration of flu symptoms.
- Katelin Lisenby: Okay. And Kadyn, were there any changes in duration of therapy of antibiotics in light of the antibiotic resistance that we're facing?
- Kadyn McLean: No, there weren't really any changes there as far as duration. Basically, they still say it's to continue therapy until a patient reaches clinical stability and for no less than a total of five days. And that's due to limited evidence supporting any shorter course of therapy.
- Katelin Lisenby: Well, that's all the time we have today. I want to thank Kadyn for joining us today to discuss the 2019 Community Acquired Pneumonia Guidelines. Please join us here every Thursday where we will be talking with ASHP member content matter experts on a variety of clinical topics.
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