

**Hospital: Bonner General (Sandpoint, Idaho)**

**Presenter: Kathy Trosin**

**Date: June 4, 2019, 9AM Session**

**Question/case summary:**

1.) I would be interested in hearing about experience with the usefulness of the new Biofire PCR panels and how / if using them has changed management of community acquired pneumonia.

2.) Similarly, at least in pediatrics, views on new recommendations that macrolides NOT be routinely used along with ampicillin for CAP.

**UW TASP Recommendations:**

1.) Based on TASP participant response, more institutions are using the Biofire viral PCR panel vs. bacterial panel.

* + Successes seen in Coulee ER where the test is liked by MDs who feel comfortable discharging patients without antibiotic prescriptions when a viral etiology is confirmed
  + Cost/pricing and insurance coverage is a barrier
  + Pediatric experience, Dr. Nicole Poole from Seattle Children’s: The viral PCR is used heavily in this patient population. However, one issue is with validity of the results as children tend to shed viruses for quite some time, which may or may not be contributing to the syndrome at hand
  + Per Dr. Rob Cybulski, these machines are not well-built for high throughput. They will breakdown after ~1500 assays

2.) Macrolides should NOT be routinely used along with ampicillin for CAP.

* + **Children < 5 are at low risk of atypical pathogens and are usually infected with S. pneumonia. Generally, macrolides are *inappropriate* in this population** 
    - < 2% of kids < 2 years old are at risk for mycoplasma
  + In teens and adolescents, the rate of mycoplasma is ~20%, so macrolides *may* be useful.
  + *Mycoplasma pneumoniae* is a common colonizer of children and a very rare cause of infection in children 5 years of age and younger. A common scenario is for a child to be prescribed a 5-day course of azithromycin by which time the true infection, usually a virus, improves or resolves on its own.
  + Recent studies suggest *Mycoplasma pneumoniae* infections treated with azithromycin have no significant improvement in symptoms compared to those without antibiotic treatment, suggesting *M. pneumoniae* infections are self-limiting.
  + Per guidelines for CAP and OM: Number one antibiotic choice is a beta-lactam (usually amoxicillin for S. pneumoniae).
    - Guidelines state a macrolide may be appropriate if symptoms are consistent with atypical pneumonia – this may be the factor driving their use (as well as their convenience and the perception that they are low risk). Difficult to distinguish clinical presentation of atypical pneumonia.
  + The rate of resistance of *S. pneumoniae* to macrolides is up to 50% in some areas
  + Macrolide monotherapy (e.g. z-pak) inappropriately treats pneumonia, especially when it is a more severe presentation
  + Macrolides are the second highest prescribed antibiotic after amoxicillin in pediatric populations. Per Dr. Poole’s research, 70% of children were prescribed azithromycin monotherapy as first line for CAP in the WA/WY/AK/MT/ID region, so this is a major area of performance improvement.
  + KEY TAKE-AWAYS:
    - *Mycoplasma* is a common colonizer of children, so finding it on a molecular panel ≠ infection
    - If concerned for a respiratory infection due to a bacteria, treatment should be limited to a beta-lactam (e.g. amoxicillin) for children 5 and under.
    - For older children, there are several options, but one common approach in Europe is to start with amoxicillin and if no improvement in the next 2-3 days, to switch to or add azithromycin.

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