

Title: How to Manage Antibiotics in LRTIs with Positive Respiratory Pathogen Panel Like a Pro: The Utility of Procalcitonin

Author(s) and Institution(s): Julia Wu, PharmD. Rebecca Nolen, PharmD, BCPS, BCIDP, AAHIVP; Davina Dell-Steinbeck, PharmD, BCPS. SSM Health St Mary's Hospital - St Louis.

Introduction: In 2016, it was found that procalcitonin use at SSM Health St Mary's was inconsistent and inefficient. Additionally, LaCasse et al found that 68.3% of patients at St. Mary's with positive RPP did not have their antibacterial therapy de-escalated or discontinued. These studies are strong indicators that additional support for a positive RPP for discontinuation of antibiotics could be useful. The purpose of this study is to investigate the efficacy of using PCT values to make recommendations for discontinuation of inappropriate antibiotics in patients with positive RPP.

Methods: This was a retrospective evaluation of recommendation success. Patients were identified using a Best Practice Alert for positive RPP results. Analysis was conducted using descriptive statistics, chi-square tests, and t-tests.

Results: A total of 114 patients were included, 27.2% of which had a pharmacist recommendation to stop antibiotics based on RPP and PCT. Of these patients, 67.7% had clinicians accept the recommendation, which was not significantly different from our test hypothesis of 75% ($P= 0.296$). There was no difference between patients who had a recommendation versus patients who did not have a recommendation in any of the secondary outcomes.

Conclusions: The combination of a negative PCT and positive RPP was successful in achieving a 67.7% discontinuation rate in patients who received pharmacist recommendations. Further clinician education on the use of antibiotics in COPD exacerbations could be beneficial, considering the most common reasons for rejecting recommendations. This study represented a major improvement in rates of antibiotic discontinuation compared to results obtained by Lacasse et al three years prior.