

## COVID-19 and Antimicrobial Stewardship



COVID-19 is a new disease. On initial presentation, clinicians can find it difficult to differentiate between coronavirus disease and bacterial community-acquired pneumonia. COVID-19 patients often develop a hyperinflammatory phase during the disease process, which could again be difficult to distinguish from a secondary bacterial infection. That is why nearly 72% of patients suffering from COVID-19 receive antibiotic therapy during hospital stay. This overuse of antibiotics is further aggravating an already progressive issue in healthcare - antimicrobial resistance.

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Procalcitonin (PCT) has been shown to be useful in the early diagnosis of lower respiratory tract infections of bacterial origin. Also, measuring PCT levels can help determine the need for antibiotic therapy. C-reactive protein (CRP) is usually increased in COVID-19 patients, while PCT is usually low. But in patients with severe COVID-19 disease and in those with secondary bacterial infections, PCT levels increase.

According to data from 66 COVID-19 ICU patients, 50% of the patients developed a secondary infection during ICU admission. In patients who didn't, both PCT and CRP decreased over time. In patients with secondary infection, a significant increase in both PCT and CRP was observed.

These findings suggest that the use of biomarkers to predict secondary infections in ICU patients should be considered during these challenging times. The study shows that COVID-19 patients who do not develop bacterial infections usually present with high initial CRP levels and low to moderate PCT levels, but these gradually decrease over time.

By monitoring PCT levels, initiation of antibacterial therapy in ICU patients can be controlled. CRP in COVID-19 patients is consistently elevated, therefore, it does not have the predictive value for bacterial infections in the initial phase, but both PCT and CRP may help identify or rule out secondary bacterial infections and facilitate the appropriate use of antibiotic therapy.

Source: [Critical Care](#)

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