



Synopsis

Procalcitonin evaluation of antibiotic use in COVID-19 hospitalised patients: The PEACH mixed methods study

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Plain language summary

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Why did we do this study?

A blood test called procalcitonin is used in hospitals to help diagnose bacterial infections and guide antibiotic treatment decisions. There is evidence to support its use in lung infections. During the COVID-19 pandemic, some hospital clinicians used the procalcitonin test to guide antibiotic prescribing decisions, while in other hospitals, they did not. This study looked at how the procalcitonin test was used to help make those decisions and compared antibiotic prescribing and patient outcomes between hospitals that did or did not use the procalcitonin test.

What did we do?

We asked hospital pharmacists to complete a survey on antibiotic prescribing, conducted interviews with clinicians who worked during the pandemic and collected and analysed data from patients' clinical records from hospital trusts that did and did not use procalcitonin testing during the first wave of the COVID-19 pandemic. We showed how procalcitonin testing was used, how staff made decisions on antibiotic prescribing and how procalcitonin affected antibiotic use and patient outcomes.

What did we find?

We found that procalcitonin was not used consistently across the National Health Survey. In hospitals that did use the test on patients with COVID-19, there was a statistically significant reduction in antibiotic prescribing, with no adverse effect on patient outcomes. We also found that antibiotic prescribing decisions for staff were influenced by many factors such as level of experience, confidence, support from other staff and internal organisational factors. Procalcitonin testing was likely to be value for money.

What does this mean?

Procalcitonin testing was shown to be a valid way to improve antibiotic use during the first wave of the pandemic. However, there remains a need for more adaptive, inclusive, wide-reaching clinical trials of tests that can diagnose infection. More implementation research is required before introduction into routine clinical practice.

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This article

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