

Procalcitonin testing to guide antibiotic therapy for the treatment of sepsis in intensive care settings and for suspected bacterial infection in emergency department settings: a systematic review and cost-effectiveness analysis

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Plain English summary

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This report considers whether procalcitonin (PCT) testing could be used to decide whether or not to start and when to stop antibiotic treatment. PCT is produced in your body and increases when you have a bacterial infection. It can also increase when you have a viral infection, but these increases are usually smaller than for bacterial infections. We considered PCT testing in two groups of people: people with sepsis (blood poisoning) or suspected sepsis in intensive care units (ICUs) and people with possible bacterial infections in emergency departments (EDs). The evidence is current to June 2014.

We included 18 randomised controlled trials, eight in ICUs and 10 in EDs. None of the ICU studies included children, but two of the ED studies were conducted in children. All studies compared guidance on when to start or stop antibiotic therapy that included PCT testing with guidance that did not include PCT testing.

Research shows that guidance that includes PCT testing appears to reduce the amount of antibiotics used, and may reduce hospital stay. However, it is not clear that PCT testing is the main cause of these reductions, or that such reductions would follow if PCT testing was used in UK hospitals. There is no indication that PCT testing is associated with increases in adverse effects such as hospital re-admission, death, infections, need for help with breathing or other medicines. PCT testing may be cost-saving for adults with sepsis in an ICU setting and adults and children with possible bacterial infection in EDs.

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This report

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