Rapid bacterial infection test reduces antibiotic use

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Pills. Credit: Public Domain

Researchers from the Oxford University Clinical Research Unit in Vietnam have shown that using a rapid (5-minute) test can reduce antibiotic misuse for respiratory infections. Cutting the number of unnecessary antibiotic prescriptions is a key way to prevent the spread of antibiotic-resistant infections.

The rapid tests detect C-reactive protein (CRP), a marker of infections caused by bacteria, in patients' blood. A low level of CRP is suggestive of viral infection and therefore antibiotic treatment is not required.

The study team made the tests available at 10 primary healthcare centres in and around Hanoi, Vietnam, and recorded antibiotic use for 2000 patients who randomly were or were not tested for CRP. The results showed a significant reduction of antibiotic use in adults and children while clinical recovery was the same. This trial was the first to investigate this in a resource-constrained setting and showed similar results to trials in Europe. This was also the first trial to assess CRP tests for children.

Vietnam is the world's 14th most populous country with a rapidly developing economy. Unregulated access to antibiotics makes Vietnam vulnerable for drug resistance development. While infectious diseases are still one of the leading causes of death, resistance critically compromises treatment options. The WHO reported in 2014 that antibiotic resistance of common bacteria in community and hospitals had reached alarming levels world-wide. Promoting new, rapid diagnostics to cut unnecessary use of antibiotics was listed as one of the priority areas to fight antibiotic resistance.

This intervention has the potential to be scaled up as several newer commercially affordable CRP tests have now been assessed and shown to be reliable. Prof. Heiman Wertheim, principal investigator, added: "There were large differences in the effect of the intervention between health centres; one centre saw no effect due to antibiotic stocks they wanted to get rid of. This nicely illustrates one of the practical obstacles that need to be overcome".

Prof Nguyen Van Kinh, investigator and director of the National Hospital for Tropical Diseases: "With this easy-to-use tool, primary healthcare providers can safely limit the unnecessary antibiotic use for viral respiratory infections. The study provides important evidence for simple solutions in antibiotic stewardship programmes. To enable a large scale implementation, further studies assessing cost-effectiveness of this intervention are needed". This trial provides important data necessary for planning such studies.

Dr Cao Hung Thai, vice head of the Medical Services Administration of the Ministry of Health, concluded: "This is important evidence that the Ministry of Health can use for primary health care regulations to improve rational antibiotic use".

More information: The paper, Point-of-care C-reactive protein testing to reduce inappropriate use of antibiotics for non-severe acute respiratory infections in Vietnamese primary health care: a randomised controlled trial, is published in *The Lancet Global Health* online on August 3 2016.

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