Respiratory Update:
EUnetHTA Report CRP POCT

C-reactive protein point-of-care testing (CRP POCT) to guide antibiotic prescribing in primary care settings for acute respiratory tract infections (RTIs). Rapid assessment on other health technologies using the HTA Core Model for Rapid Relative Effectiveness Assessment.

O'Brien K, Gloeckner L, Jordan K, Lucey D, Marshall L, Moran P, Wilbacher I, Harrington P

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For detailed and further information please see the original paper available at (open access): https://www.eunethta.eu/wp-content/uploads/2019/02/EUnetHTA_OTCA012_CRP-POCT_31012019.pdf

Summary

EUnetHTA is a network of HTA bodies within Europe that promote the development of health technology assessment in all European countries by working together.

This collaborative assessment evaluated the relative effectiveness and safety of using C-reactive protein (CRP) point-of-care testing (POCT) to guide antibiotic prescribing in patients with acute respiratory tract infections (RTIs) in primary care settings.

It covers among others:
- Clinical effectiveness and safety
- Diagnostic test accuracy
- Analytical performance

The authors identified 12 studies investigating the use of CRP POCT to guide management of patients who present with symptoms of acute RTI (table 8, pages 85-86).[1-12] All those studies related to only three of the 15 CE marked devices, all of which were quantitative devices: Afinion™, Nycocard™, QuikRead®.
It is not certain if these data will apply to semi-quantitative devices given potential differences in their characteristics, performance and acceptability. The features of the 15 marketed CRP POCT in Europe are listed in table 7 (pages 45-58).
From the included studies the authors conclude that CRP POCT, when used to guide management of patients who present with symptoms of acute RTI, leads to reduced antibiotic prescribing both at index consultation and up to 28 days follow-up.

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The report gives also an overview about the analytical performance of CRP POC tests. Data on accuracy, precision and ease of use were extracted for each device from 18 included studies.

Regarding accuracy when used at the point of care, the report found a bias of <5% for the Afinion™ reported in two studies, while the bias for the NycoCard™, the QuikRead®, and the iChroma™ were <15%. The accuracy was more variable for QuikRead® and the Smart Eurolyser.

The authors found 4 studies comparing multiple devices and providing a direct comparison of the devices. One of those reported the Afinion™ and Smart Eurolyser to be the easiest to operate.[13] Another concluded that the Afinion™ and Smart Eurolyser were the preferred analysers for CRP POCT based on a combination of their analytical performance and ease of use.[14] A third study found that the Afinion™ and QuikRead® devices had the lowest systematic bias and the Afinion™, QuikRead® and QuikRead go® were associated with good participant performance in a quality assurance scheme.[15] Finally one study, which compared the NycoCard™ device at the POC and the QuikRead® device in the laboratory setting, reported that the NycoCard™ device had better analytical performance.[16] In terms of ease of use, the authors concluded that devices that are easier to use tend to have less pre-analytical handling and are designed in such a way that they are less susceptible to human error.

Conclusions

The authors are moderately confident that CRP POCT reduces antibiotic prescribing at index consultation in both URTI and LRTI (upper and lower respiratory tract infection). They are confident that patient safety will not be compromised.

"Given the high prescribing rate for acute RTIs, this reduction is likely to be clinically important as it reduces an individual's future risk of antibiotic resistance as well as reducing unnecessary antibiotic use for self-limiting RTIs when antibiotic-related harm is more likely than benefit."

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