INTRODUCTION

The QuikRead go CRP test is intended for quantitative determination of C-reactive protein (CRP) in whole blood, serum and plasma using the QuikRead go instrument. CRP is an acute phase protein present in low concentrations in healthy individuals. Pathological conditions associated with invasive bacterial infection, inflammation or tissue destruction cause elevation of the CRP level. The rise in CRP concentration is rapid, and increased levels can be detected within 6 to 12 hours from the onset of the inflammatory process.

C-reactive protein is the only biomarker that is both available as a point-of-care (POC) test and has the potential to assist in guiding antibiotic prescription for acute respiratory infections (ARI) and other lower respiratory infections in primary healthcare. The POC CRP tests are frequently used in Scandinavia and in the Netherlands, typically for respiratory tract infection patients. Quantitative measurement of CRP concentration has also been reported to be a sensitive indicator in the follow-up of the antimicrobial therapy and the course of bacterial infections. It is an effective tool in controlling and monitoring postoperative infections as well.

MATERIALS AND METHODS

Whole blood samples were used with the Orion Diagnostica QuikRead go CRP test and the corresponding plasma samples were analysed with Roche Modular system using the CRPL3 assay and with CRP Wide Range assay on the Siemens Advia 1800 Clinical Chemistry System. With the Afinion Afinion CRP POC test, whole blood samples were used.

The QuikRead go CRP test is an immunoturbidimetric CRP assay. The sample is added into a cuvette and closed with a reagent cap. The cuvette is placed into the QuikRead go instrument, which automatically measures CRP in two minutes. The sample volume is 20 μl and the measurement range is 5–200 mg/l with whole blood and 5–120 mg/l with serum and plasma samples. The system automatically detects the sample type and the whole blood CRP value is corrected based on the hematocrit level of the sample.

A private laboratory performed measurements with the Siemens Advia 1800 chemistry analyser. The QuikRead go, Roche Modular and Afinion analysis were performed in Orion Diagnostica.

RESULTS

Passing-Bablok regression analysis was used in calculations and the results are presented in figures 1–3. The correlation of the QuikRead go CRP test (with whole blood samples) to the Roche Modular with CRPL3 assay (the corresponding plasma samples) was y = 0.986−0.99, r = 0.99 (n=62) and to the Siemens Advia 1800 with CRP Wide Range assay (plasma samples) y = 0.946−0.80, r = 0.99 (n = 80). The correlation of the comparison between the QuikRead go CRP test and the Afinion CRP test with whole blood samples was y = 1.05x+1.7, r = 0.99 (n = 59).

CONCLUSION

The QuikRead go CRP test correlated very well with all the three comparative tests: Roche Modular using the CRPL3 assay, Advia 1800 CRP Wide Range assay as well as with the Afinion CRP test. The study shows that the QuikRead go CRP test gives reliable results as the two clinical chemistry analysers and the POC CRP test.

REFERENCES


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Fig. 1. QuikRead go CRP test (y) compared to the CRPL3 assay (x) with the Roche Modular analyzer. Plasma samples were used with the CRPL3 assay, while blood samples were used with the QuikRead go CRP test.

Fig. 2. QuikRead go CRP test (y) compared to the Siemens Advia 1800 CRP Wide Range assay (x). Plasma samples were used with the Siemens Advia 1800 CRP Wide Range assay, while whole blood was used with the QuikRead go CRP test.

Fig. 3. QuikRead go CRP test (y) compared to the Afinion CRP test (x). Whole blood samples were used with both tests.

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