FEBRIDX® POINT-OF-CARE TESTING TO GUIDE ANTIBIOTIC THERAPY FOR ACUTE RESPIRATORY TRACT INFECTION IN UK PRIMARY CARE: A RETROSPECTIVE OUTCOME ANALYSIS

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ABSTRACT

INTRODUCTION: Acute respiratory tract infection (ARTI) is a common illness presenting to general practice in the United Kingdom. Viral and bacterial infections clinically present similarly and are frequently misdiagnosed. Diagnostic uncertainty leads to inappropriate use of antibiotic prescriptions.

OBJECTIVE: All patients tested with FebriDx®, a new rapid diagnostic test for identifying clinically significant viral or bacterial infections, were examined to determine if test results safely impacted antibiotic prescription behaviour that would have been otherwise determined based solely on clinical signs and symptoms.

METHOD: A retrospective chart review was performed on 21 patients that presented to an outpatient general practice with symptoms of an acute respiratory tract infection and were administered the FebriDx® test. In each case, a clinical diagnosis was identified, the FebriDx® test recorded, antibiotic prescriptions analysed, and the response to therapy evaluated.

RESULTS: FebriDx® testing was performed on 21 patients with a mean age of 46.3 years, ranging in age from 3 years to 84 years old, including 12 males and 9 females. Patients had clinical diagnoses of both nonspecific upper respiratory tract infection (URTI) and lower respiratory tract infection (LRTI). FebriDx® altered clinical management in 48% (10/21) and reduced unnecessary antibiotic prescriptions in 80% (8/10). All of the patients, inclusive of those patients given antibiotics or withheld antibiotics, demonstrated full clinical recovery without additional unscheduled medical consultations or subsequent newly initiated antibiotic prescriptions. One patient was diagnosed with bacterial sepsis and admitted to the hospital.

CONCLUSION: Point-of-care (POC) diagnostic testing may help primary care general practitioners cost-effectively manage patients presenting with clinical evidence of an acute febrile respiratory tract infection. FebriDx® test results improved clinical management decisions and resulted in a reduction in antibiotic therapy without any subsequent adverse events.

In the UK acute respiratory infections (ARI) are routinely managed based only on clinical symptoms and signs. Viral and bacterial infections clinically present similarly and are frequently misdiagnosed leading to unnecessary antibiotic treatment.

Excessive use of antibiotics drives the development of antimicrobial resistance, increased frequency of adverse events and increased health care costs. Improving diagnostic certainty may help identify those patients that will benefit from antibiotic treatment.

Using CRP (c-reactive protein) as a single biomarker at a 20 mg/L cut off will reduce the risk of missing a clinically significant bacterial infection but simultaneously leads to overtreatment of viral infections that do not necessitate any antibiotic therapy.

FebriDx® is a new rapid POC test that detects elevated levels of myxovirus resistance protein A (MxA) and CRP from capillary blood. MxA is a specific biomarker for viral infection and confers enhanced specificity onto the CRP biomarker.

FebriDx® improved clinical management in 48% of patients and reduced antibiotics in 80% of clinical cases without any adverse testing events.

FebriDx® was shown to have high sensitivity and specificity for identifying a clinically significant infection and aiding in the differentiation of viral from bacterial infection. POC diagnostic testing with FebriDx® may help primary care GPs cost-effectively manage patients presenting with clinical evidence of an ARI.

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