U.S. Health Economic Analysis Demonstrates the Cost Reduction Impact of Using B·R·A·H·M·S PCT to Support Antibiotic Stewardship Versus Standard of Care

Outcome shows a reduction in antibiotic days, shorter length of stay, shorter duration of mechanical ventilation, and fewer patients at risk for antibiotic resistance or C. difficile infection lead to incremental reduction of costs of 26 percent in sepsis and 17.7 percent in lower respiratory tract infection

WALTHAM, Mass., May 23, 2019 /PRNewswire/ -- A new health economic analysis published in the journal PLOS One, compared the cost impact of using B·R·A·H·M·S PCT (Procalcitonin) assays to support antibiotic stewardship decisions versus the standard of care for patients with suspected sepsis or lower respiratory tract infections (LRTI) in the United States. Procalcitonin is a biomarker that aids clinical decision-making about when to initiate and discontinue antibiotic therapy for inpatients or patients in the emergency department with suspected or confirmed LRTI. The biomarker also aids in decision making on antibiotic discontinuation for patients with suspected or confirmed sepsis. Several cost analyses have been conducted on Procalcitonin aiding in antibiotic stewardship, but none using data primarily from the United States.

More than 1.7 million people in the U.S. are diagnosed with sepsis each year1,2,3 and it is the number one cost of hospitalization in the U.S. consuming more than $27 billion each year4,5,6,7. LRTIs are among the most common reasons for antibiotic prescription8 and an estimated 30 to 85 percent of these prescriptions are unnecessary or inappropriate9-17. Even when indicated, antibiotic treatment courses often exceed recommended durations17.

A previously published health economic decision model was used to compare the costs and effects of B·R·A·H·M·S PCT assay in supporting antibiotic stewardship decisions. The analysis considered the societal and hospital perspective with a time horizon covering the length of hospital stay. The main endpoints were total costs per patient, including treatment costs and productivity losses, the number of patients with antibiotic resistance or C. difficile infections, and costs per antibiotic day avoided.

"My clinical experience is consistent with the scientific data, demonstrating how the monitoring of bacterial infections with B·R·A·H·M·S PCT assay can reduce the costs associated with the management of LRTI and sepsis patients through reductions in length of stay and antibiotic usage," said H. Bryant Nguyen, MD, John E. Peterson Professor of Medicine and Chief of Pulmonary & Critical Care Medicine at Loma Linda University, Loma Linda, California.

Based on the results, the authors concluded that using B·R·A·H·M·S PCT assay to aid in decisions about antibiotic use for hospitalized patients with suspected sepsis and LRTI is associated with a reduction in antibiotic days, a shorter length of stay on the regular ward and the intensive care unit, shorter duration of mechanical ventilation, and fewer patients at risk for antibiotic resistance or C. difficile infection. Total costs in the B·R·A·H·M·S PCT assay group compared to standard care were reduced by 26.0 percent in sepsis and 17.7 percent in lower respiratory tract infection (total incremental costs of −$11,311 per patient and −$2,867 per patient respectively).

Availability of product in each country depends on local regulatory marketing authorization status.

About B·R·A·H·M·S PCT
B·R·A·H·M·S PCT assay provides information on the presence and severity of bacterial infection, helping
physicians in emergency departments, intensive care and other hospital units decide whether to initiate antibiotic therapy in patients with suspected or confirmed lower respiratory tract infections (LRTI) and when to safely discontinue antibiotics in patients with LRTI and sepsis. In clinical studies, B-R-A-H-M-S PCT assay has been shown to reduce the antibiotic prescription rate and duration in patients with LRTI, defined as community-acquired pneumonia (CAP), acute bronchitis, and acute exacerbation of chronic obstructive pulmonary disease (AECOPD). Evaluating the decline in B-R-A-H-M-S PCT assay levels over time aids clinicians in determining whether to discontinue antibiotic therapy for patients with LRTI or sepsis, without compromising patient safety.

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