



New Study Shows PNA FISH® Test Reporting Dramatically Decreased Mortality and Hospital Costs for Patients with Bloodstream Infections

Decreased ICU Mortality for Enterococcal/Streptococcal Bacteremia by 47% and Candidemia by 86% Cost Avoidance of More Than \$4.7 Million per Year

Woburn, MA, U.S.A. and Copenhagen, Denmark – October 13, 2011 – A new study documents significant decreases in ICU mortality and hospital costs for patients with bloodstream infections after implementation of PNA FISH tests for rapid identification of bloodstream pathogens. The study was performed at The University of Arizona Medical Center – University Campus (Tucson, Arizona) in a collaboration between the clinical microbiology laboratory and infectious diseases pharmacists as part of the institution’s Antimicrobial Stewardship Program. Results were presented at the recently concluded 51st Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC 2011) in Chicago.(1)

The retrospective study (pre-PNA FISH vs. post-PNA FISH intervention) assessed the clinical and financial impact of laboratory testing and reporting of PNA FISH results to guide therapeutic intervention by infectious diseases pharmacists and physicians using established treatment algorithms. The study included patients with positive blood cultures admitted to the medical center between August 2007 and March 2011. A total of 460 patients with results indicative of enterococcal or streptococcal bacteremia, i.e., Gram-positive cocci in pairs and chains (GPCPC) from positive blood cultures, were included in the study. Of these patients, 262 had PNA FISH performed. A total of 125 patients with yeast-positive blood cultures, indicative of candidemia, were also included, of which 82 had PNA FISH performed.

Significant Study Findings

- Turn-around time for confirmation of results for *E. faecalis*, *E. faecium*, and other streptococci was decreased by 3.3 days (4.4 to 1.1 days) and by 3.9 days (6.2 to 2.3 days) for *Candida* species
- ICU mortality for enterococcal/streptococcal bacteremia was decreased by 47% (34.6% to 18.3%), $p = 0.04$.
- ICU mortality for candidemia was decreased by 86% (41.7% to 5.9%), $p = 0.02$.
- Cost avoidance greater than \$4.7 million per year was documented

The authors, led by Donna M. Wolk, Ph.D., D(ABMM), Associate Professor of Clinical Pathology at the University of Arizona and the BIO5 Institute for Collaborative Research, concluded that “through laboratory collaboration with infectious diseases pharmacists, testing and reporting of PNA FISH results to clinicians resulted in significant reductions in laboratory turn-around times and ICU mortality, and substantial reductions in overall mortality for our patients.”

“The study clearly demonstrates that implementing and active reporting of rapid diagnostic tests like PNA FISH can have a real impact on improving outcomes and the cost of care for patients with bloodstream infections. That’s a win-win situation for patients, healthcare providers and the healthcare system overall” said Thais T. Johansen, President and CEO of AdvanDx. “We are very proud of the contribution PNA FISH can make in helping hospitals improve the quality and efficiency of care and we greatly appreciate the work that Dr. Wolk and her colleagues at The University of Arizona Medical Center have performed in demonstrating those benefits.”

About Bloodstream Infections and PNA FISH®

Every year, more than 875,000 patients are diagnosed with bloodstream infections in the United States. The infections are associated with high mortality rates and increased healthcare costs.(2,3) The infections can be difficult to treat as conventional diagnostic methods can take days and clinicians have to balance prescribing early, effective therapy while avoiding prolonged exposure to broad-spectrum antibiotics in the face of increasing antibiotic resistance. PNA FISH® is a rapid, molecular diagnostic platform that provides pathogen identification directly from positive blood cultures in just 90 minutes. PNA FISH tests enable microbiology labs to report pathogen results 2 to 3 days sooner than conventional methods and thereby help clinicians optimize antibiotic therapy earlier for patients with bloodstream infections.

About AdvanDx

AdvanDx is a leading provider of rapid and accurate molecular diagnostic tests for identification of pathogens that cause critical infections in hospitalized patients. Our mission is to improve antibiotic decision-making and patient outcomes while limiting unnecessary antibiotic use and reducing cost.

AdvanDx employs a unique, Whole Cell Analysis (WCA) approach to pathogen identification using our proprietary Peptide Nucleic Acid Fluorescence *In Situ* Hybridization (PNA FISH) technology platform. This technology enables fast and highly accurate single cell analysis for bacterial species identification in samples from patients with critical infections.

AdvanDx is the market leader in molecular testing of positive blood cultures enabling clinical microbiology labs to report pathogen identification results 48 to 72 hours earlier than with conventional testing methods. When used by physicians and pharmacists to ensure early, appropriate antibiotic therapy for patients with bloodstream infections (a.k.a. septicemia), AdvanDx's PNA FISH® tests have been shown in clinical studies to reduce patient mortality, shorten length of stay (LOS) and lower hospital costs.

For more information visit www.AdvanDx.com

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