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Comprehensive STD Testing Improves Patient Outcomes

By Mark L. Fuerst | October 4, 2013

Comprehensive screening for sexually transmitted disease (STD) pathogens improves patient and financial outcomes, according to a new study presented at the Infectious Disease Society of America annual meeting in San Francisco.

The silent epidemic of STD and related complications represents a significant health issue world-wide. The US has the highest rate of STDs in the developed world: about 19 million new infections occur each year.

“STD organisms are all part of an ecological pool that simply share one thing in common: sex. The ecological pool predisposes patients to co-infection,” reported lead author Carol Quinter, PhD, of the Kettering Medical Center, Kettering, OH.

“Testing for all important STD pathogens is the only way to detect all agents that might be involved in both symptomatic and asymptomatic patients,” Dr. Quinter told ConsultantLive. “Asymptomatic patients account for considerable spread of these diseases. The decision to screen or test must be based on the sexual activity of the patient.”

Culture tests lack sensitivity and specificity for gonorrhea and are difficult to perform for Chlamydia.

“Culture for herpes lacks sensitivity and specificity, and is not realistic for trichomonas, which has a 30% false negative rate using wet mount,” said Dr. Quinter.

Molecular technology is the technology of choice, she said. Target Enriched Multiplex Polymerase Chain Reaction (TEM-PCR STD 5)-- a proprietary molecular multiplex technology patented by Diatherix-- is a comprehensive, rapid, sensitive, and specific test for the detection of 5 common pathogens associated with STD in both symptomatic and asymptomatic patients. This nested PCR with tagged, target specific primers provides initial target gene identification.

Dr. Quinter and colleagues conducted an initial clinical validation of the TEM-PCR STD 5 panel using swab samples collected from 20 symptomatic, emergency department patients. Following the initial clinical validation, TEM-PCR STD 5 was implemented for all routine testing of specimens (swabs and urine) submitted for STD evaluation.

A retrospective analysis of the performance of this test was conducted on 1,855 samples from an emergency department, woman’s center, and urgent care center. Of the 1,855 samples, 355 samples were positive for at least 1 STD pathogen (18% detection rate) and 130 samples were positive for gonorrhea and/or Chlamydia (7% positive rate).

“Utilization of a comprehensive screening panel improved detection rate by 11% and resulted in the detection of an additional 27 co-infections,” said Dr. Quinter. “Our data suggest that multiple cases of herpes simplex virus 1 and 2 and trichomonas are missed if patients are tested for gonorrhea/Chlamydia only.”

She noted that wet mounts for trichomonas vaginalis (TVA) are unreliable. “The burden of TVA and the substantial evidence linking it to adverse health outcomes, including pelvic inflammatory disease, preterm delivery, cervical cancer, and increased susceptibility to HIV, speaks to the appropriateness of its inclusion in routine screening,” she said.

The data suggest that “comprehensive testing using technology such as TEM-PCR improves the outcome of patients with STD and affects cost. TEM-PCR is a superior technology for use in patients we want to test for more than one agent in a single test,” said Dr. Quinter.