Semi-quantitative cryptococcal antigen rapid test (CryptoPS, Biosynex®) for cryptococcal meningitis in patients living with HIV in Sub-Saharan Africa: prospective multicenter diagnostic accuracy study (DREAMM)

DREAMM 10-42 Kouanfack

1 Kouanfack

2 Mina Hesseinipour, John Bradley, Shokibar Jaffri, Thomas Harrison, Olivier Lochtory, Angela Livermore

3 Molecular Mycology Unit, Institut Pasteur, Paris, France
4 University of North Carolina Project-Malawi, Lilongwe, Malawi
5 University of Delft, Delft, The Netherlands
6 National Institute for Medical Research Muhimbili Medical Research Centre, Dar es Salaam, Tanzania
7 Zomba Central Hospital, Zomba, Malawi
8 London School of Hygiene & Tropical Medicine, London, United Kingdom
9 Liverpool School of Tropical Medicine, Liverpool, United Kingdom
10 Sir George’s University of London, London, United Kingdom
11 Department of Infectious Diseases and Tropical Medicine, Centre Hospitalier d’Ajaccio, Ajaccio, France
12 Service des Pédiatres Généralistes et Maladies Infectieuses, Hôpital Necker - Enfants malades, Paris, France
13 National Reference Center for Invasive Mycoses and Antifungals, Institut Pasteur, France

Posters 3, September 23, 2022, 12:30 PM - 1:30 PM

Background: Cryptococcal meningitis (CM) remains a cause of morbidity and mortality in low-middle-income countries (LMICs). Detection of Cryptococcus neoformans in CSF is a key diagnostic tool and is critical for timely and appropriate treatment. Therefore, sensitive and specific tests that can be applied in resource-constrained settings are needed.

Objectives: Our objective was to evaluate the diagnostic effectiveness of CryptoPS test (Biosynex, Illkirch-Graffenstaden, France), a novel semi-quantitative RDT, in routine case settings in Sub-Saharan Africa.

Methods: All CryptoPS were processed in parallel with the blood samples, according to the manufacturer's instructions. The samples were collected from patients diagnosed with cryptococcal meningitis and were confirmed by PCR and culture. The test was considered positive if the CrAg titre was >1:10. The test was considered negative if the CrAg titre was ≤1:10. The sensitivity and specificity of CryptoPS were calculated, and the results were compared with the gold standard, the results of the culture.

Results: From January 2018 to March 2021, 316 patients were enrolled, and 304 samples were evaluated. The sensitivity and specificity of CryptoPS were 100% (95% CI: 0.0-1.0) and 99.2% (95% CI: 0.98-1.01), respectively. These results were consistent with those of the culture.

Conclusion: CryptoPS is a promising test for the diagnosis of cryptococcal meningitis in LMICs. It is a rapid, sensitive, and specific test that can be used in resource-constrained settings. Therefore, it is recommended for use in the diagnosis of cryptococcal meningitis in LMICs.