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# Abstract

WELBB04 - Oral Abstract

## Evaluation of a novel point of care cryptococcal antigen (CRAG) test on serum, plasma and urine from patients with HIV-associated cryptococcal meningitis

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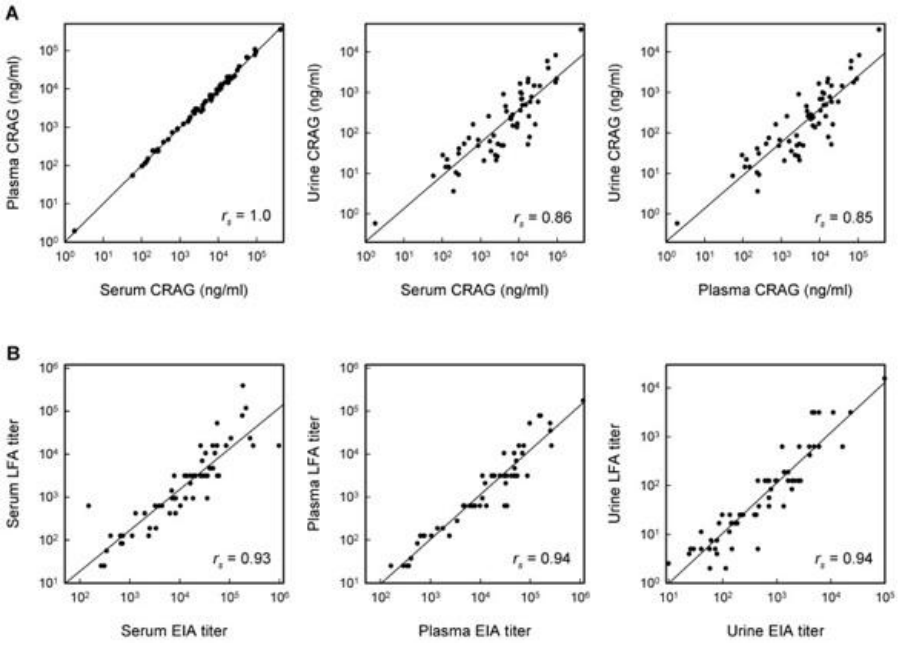
**Background:** Many deaths from cryptococcal meningitis (CM) may be preventable through earlier diagnosis and treatment. An inexpensive point-of-care (POC) assay for use with urine or a drop of blood would facilitate early diagnosis of cryptococcal infection in resource-limited settings. We compared cryptococcal antigen (CRAG) concentrations in plasma, serum and urine from patients with CM using an antigen-capture assay for glucuronoxylomannan (GXM) and a novel POC dipstick test.
**Methods:** GXM concentrations were determined in paired serum, plasma and urine from 62 patients with active or recent CM using a quantitative sandwich ELISA. A dipstick lateral-flow assay developed using the same monoclonal antibodies for the sandwich ELISA was tested in parallel. Correlation coefficients were calculated using Spearman's Rank Test.
**Results:** All patients had detectable GXM in serum, plasma and urine using the quantitative ELISA. Comparison of paired serum and plasma showed identical results (figure 1a). There were strong correlations between GXM levels in serum/urine ($r_S$=0.86, $P$< 0.001) and plasma/urine ($r_S$=0.85, $P$< 0.001). Levels of GXM in urine were 22-fold lower than serum/plasma. The dipstick test was positive in serum, plasma and urine in 61 of 62 patients. Dipstick titres correlated strongly with the ELISA. Correlations between the methods were 0.93 ($P$< 0.001) for serum, 0.94 ($P$< 0.001) for plasma, and 0.94 ($P$< 0.001) for urine (Figure 1b).




*[Figure 1]*

**Conclusion:** This novel dipstick test has the potential to markedly improve early diagnosis of CM in many settings, enabling testing of urine in patients presenting to healthcare facilities where lumbar puncture, or even blood sampling, is not feasible.