

the detection of CNS involvement in cases of HAT caused by *T. brucei gambiense*. The decrease of trypanosome-specific antibodies concentrations in CSF could be a good parameter for definite cure. High CSF IL-10 levels during treatment follow-up indicate recurring CNS inflammation and treatment failure. An increase of Neopterin in CSF and the presence of trypanosome spliced leader RNA in the blood have a high potential as predictors for treatment failure but need further validation.

Conclusion New biomarkers for post-treatment follow-up in HAT should 1) have high diagnostic specificity and sensitivity; 2) be applicable in field conditions; 3) preferentially be performed on blood and thus avoid the painful lumbar puncture during post-treatment control visits; and 4) shorten the follow-up period.

PO 8425 THE DIAGNOSTIC AND PROGNOSTIC VALUE OF NEW URINE-BASED LEISHMANIA ANTIGEN DETECTION TESTS

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Background Visceral leishmaniasis (VL) also known as kala-azar, is a protozoan infection caused by the *L. donovani* complex and transmitted by sandflies. Early detection of leishmaniasis is critical in management of patients and for successful control and elimination of the disease. Definitive diagnosis of visceral leishmaniasis is by parasitological demonstration of parasites in splenic, lymph node or bone marrow aspirates, which are collected using invasive methods that are unsuitable in the field. This study aimed to evaluate new less invasive urine-based ELISA and rapid diagnostic test (RDT) assays for diagnosis of VL.

Methods The newly developed urine ELISA test was evaluated using archived and fresh urine samples collected from parasitologically confirmed VL patients and non-VL cases. Lateral flow assay (LFA) using the ELISA reagents were conducted for day0 samples. Serological tests (DAT, rk28 ICT) were conducted for every patient in the study.

Results In 198 patients with suspected VL, urine rapid test had a sensitivity of 72.2% and exhibited a specificity of 93.42%. Leishmania antigen ELISA had a sensitivity of 83.33% and a specificity of 95.05%. All VL-confirmed cases were followed up during the treatment period, the *Leishmania* antigen ELISA became negative 2 months after completion of treatment in most patients.

Conclusion Urine lateral flow assay is a simple addition to the diagnostics of VL particularly at field level and as a complementary test for the diagnosis of VL in smear-negative cases. Further enhancement of the test will define its performance in monitoring treatment. Further studies are recommended to evaluate the performance of both tests in the diagnosis of HIV-co-infected cases.

PO 8426 DELIVERY OF POST-DISCHARGE MALARIA CHEMOPREVENTION (PMC) WITH DIHYDROARTEMESININ-PIPERAQUINE FOR MANAGEMENT OF CHILDREN WITH SEVERE ANAEMIA IN MALAWI

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Background Children hospitalised with severe anaemia in Africa are at high risk of readmission or death within 6 months after discharge. No strategy addresses this post-discharge period. In Malawi, 3 months of post-discharge malaria chemoprevention (PMC) with monthly 3 day courses of artemether-lumefantrine (AL) in children with severe malarial anaemia prevented 31% of deaths and readmissions. There is now a need to design and evaluate an effective delivery strategy for PMC.

Methods This is a cluster-randomised trial whose primary objective is to determine the optimum PMC delivery strategy by comparing community versus health facility-based strategies with the aim to inform policy. Convalescent children under 5 years old, weighing >5 kg, admitted with severe anaemia and clinically stable are included. All children received dihydroartemisinin-piperaquine 2, 6 and 10 weeks after discharge, either: 1) at discharge with SMS reminder; 2) at discharge without an SMS reminder; 3) at discharge and community health worker reminder; 4) at the hospital with an SMS reminder; or 5) at the hospital without an SMS reminder. The primary outcome measure is uptake of courses of PMC drugs. Children will be followed up for 15 weeks. The sample size is 75 children per arm (375 total).

Results The study has nearly completed enrollment and preliminary data analysis is in progress. We expect to identify the most effective, cost-effective, acceptable and feasible strategy for delivering intermittent preventive therapy post-discharge for management of severe anaemia in under-five children.

Conclusion The findings of this study will be presented; they address the knowledge gap regarding the potentially preventable component of the burden that occurs after discharge from hospital, and inform the optimal delivery strategy for PMC.

PO 8430 A GEOSPATIAL APPROACH TO PREDICTING DIARRHEA PREVALENCE IN NIGERIA

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Background Nigeria ranks second globally only behind India in under-five mortality prevalence. In Nigeria, 108.8 children die per 1000 live births before their 5th birthday. It is of note that diarrhoea (15.3% prevalence) is the second leading cause of under-five mortality in Nigeria after pneumonia. General poor hygiene and nutritional status are contributory factors to diarrhoea.

Methods Data was collected for severe acute malnutrition (SAM) using the weight for height z-value (WHZ) and/or oedema criteria. In addition, data on diarrhoea prevalence, oral rehydration salt therapy (ORST), improved source of drinking water and improved sanitation were collected. These were obtained for 36 states and federal capital territory (FCT) from the National Bureau of Statistics headquarters in FCT, Abuja for 2015. Correlation analysis was first carried out to determine relationships followed by geographically weighted regression analysis (GWR). GWR was used to predict under-five mortality pattern and accuracy mapped.

Results Observed correlation coefficients to diarrhoea prevalence were 0.59, -0.49, -0.35 and -0.63 for SAM, ORST, improved drinking water access, and improved sanitation,

respectively. R^2 varied across states, though positive, from 0.29 in Akwa Ibom to 0.95 in Kebbi states. Standard deviation of residuals in the regression model ranged from -3.89 to 3.33 in Borno and Gombe states respectively, while Sokoto and Bauchi had 0.006 and 0.024 respectively, thus having the best accuracy in predictions across all states in the country. Both correlation and GWR were at $p < 0.05$.

Conclusion The results obtained support literature, confirming the inverse relationship between ORST prevalence, improved drinking water access and improved sanitation to diarrhea prevalence. It also supports the already confirmed positive relationship between poor nutrition of children and susceptibility to diarrhoea. The study however expanded knowledge by incorporating geocomputation to predict diarrhoea prevalence.

PO 8438 KNOWLEDGE, ATTITUDE AND PERCEPTIONS ON ADVERSE DRUG EVENTS REPORTING AMONG PATIENTS AND HEALTHCARE PROVIDERS IN RURAL UGANDA

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Background Drug regulatory authorities promote patient safety by, among other ways, monitoring adverse drug events (ADEs). Reporting of ADEs in Uganda is below the average for a well-performing system. Enhancing patients' understanding of and involving them in reporting ADEs improves drug safety and treatment outcome monitoring. The objective of this study was to describe the knowledge, attitude, and practice of patients and healthcare workers regarding ADEs and ADEs reporting.

Methods A cross-sectional survey was carried out among 1034 respondents from randomly selected households and 327 health workers at health facilities in the Iganga Mayuge Health and Demographic Surveillance Site (IMHDSS). The IMHDSS, located in Uganda, covers 90,000 people living in 17,000 households.

Results Over half of respondents (59%) sought treatment from private drug shops, 37% from either clinic, health center or hospital, while 4% sought treatment from herbalists, friends or relatives. Over half (56%) were aware of ADEs, 57% expressed willingness to report an ADE while 43% did not know what to do when it occurs. Almost half (46%) could not differentiate between an ADE and the symptoms, and for those who could, the majority (76%) were willing to report it. Only 34% had ever reported an ADE when it occurred to them. Of those who reported, 43% had their drugs changed, 31% were only counseled while 11.5% continued taking the same medication. Among healthcare workers, 95% knew about ADEs, but only 35% had ever reported. Reasons for not reporting were: fear of being victimised or sued (35%); lack of adequate knowledge about ADE (26%); 20% thought it would disappear shortly; and 14% did not find it necessary to report.

Conclusion Patients seek their treatment from private providers. Patients want to report ADEs, but they do not have adequate knowledge. Healthcare workers' reasons for not reporting are subjective. Dedicated pharmacovigilance-related interventions at community level would improve community members' knowledge and hence ADE reporting rate.

PO 8439 EFFECT OF PLASMODIUM FALCIPARUM EXPOSURE ON HUMAN URINARY METABOLOMICS PROFILING

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Background Immunity against malaria infection is being studied extensively but the underlying mechanisms of protection remain not fully understood. Metabolomics is a post-genomic technology enabling a minimally invasive monitoring of the physiological responses to external and internal stimuli. Here, we present a longitudinal study of the urinary metabolic profiles of healthy individuals before and after intravenous administration of *P. falciparum* sporozoites, aiming at deciphering the metabolic changes observed during malaria infection.

Methods Twenty (20) healthy Gabonese and 5 Europeans were voluntarily challenged by live *P. falciparum* sporozoites (3200 PfSPZ) and followed up until they developed symptoms and became thick blood smear-positive. Urine samples were collected before and after challenge at several time points until treatment. Samples were analysed in an untargeted approach using state-of-the-art analytical platforms, namely hydrophilic interaction chromatography-mass spectrometry (HILIC-MS) and nuclear magnetic resonance (NMR) spectroscopy. A combination of the multivariate and univariate data analysis approaches was used for dissecting the metabolic effects of a host response to the infection.

Results Unlike the Europeans participants, a part of the Gabonese volunteers did not become parasitaemic. Unsupervised data analysis shows sample discrimination between Europeans and Gabonese at baseline, before and after challenge and between Gabonese who controlled their parasitaemia and those who did not.

Conclusion This metabolomics study highlighted the differences in the urinary metabolite profiles during *P. falciparum* infection. These differences observed between parasitaemic and non-parasitaemic Gabonese after challenge with *P. falciparum*, may suggest an underlying metabolic mechanism of protection against malaria infection which we will investigate in detail.

PO 8441 EXPERIMENTAL COMPARISON OF SENSITIVITY OF LAMP AND REAL-TIME PCR

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Background Human African trypanosomiasis, or sleeping sickness, remains a serious problem in tropical Africa. Timely diagnosis of this disease requires systematic population screening, particularly for *Trypanosoma brucei gambiense*, which has a long asymptomatic period.

The lack of sensitivity and specificity of conventional diagnostic tests has led in recent years to the use of molecular tools. Amplification of parasite-specific DNA sequences