PA-104 PREVALENCE AND ASSOCIATED RISK FACTORS OF TWO HUMAN SCHISTOSOMIASIS AMONG SCHOOL CHILDREN IN TWO ENDEMIC COMMUNITIES OF SOUTHERN NIGERIA

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10.1136/bmjgh-2023-EDC.86

Background Schistosomiasis remains one of the most prevalent neglected tropical diseases, especially in Nigeria which has the greatest number of infected people worldwide. School-aged children are the most vulnerable, as they participate in water contact activities that expose them to free-swimming cercariae released by infected snail species in freshwater; hence most studies target this age group. A cross-sectional study was conducted among 466 participants from two communities in South-west Nigeria to investigate the risk factors associated with high prevalence of the two human schistosome infection.
Methods Urine and stool samples were collected from consenting school children in Ilie and Ore communities of Osun State, Nigeria. Schistosoma haematobium eggs were detected in the urine using the urine filtration technique, while S. mansoni eggs were detected in stool using the Kato-Katz thick smear technique.
Results The overall prevalence of schistosomiasis was 40% (185/466), with 31% and 10% infected with S. haematobium and S. mansoni, respectively. The multiple logistic regression analysis revealed that water contact activities i.e washing and fishing (X2 =7.52; p< 0.06; X2 =19.54, p =0.000) knowledge of schistosomiasis (X2 =12.7; p= 0.00) blood in the urine (X2 =37.8; p< 0.00) were the significant risk factors associated with schistosomiasis in these communities.
Conclusion This study revealed that schistosomiasis is still prevalent in endemic communities of southern Nigeria. Factors predicting schistosomiasis were related to water contact activities (fishing and washing) knowledge of schistosomiasis, previous infection, and blood in the urine. These findings highlight the need for mass drug administration, health education, and community mobilization to significantly reduce the prevalence and morbidity of schistosomiasis in these communities.

Funding source: This work does not receive any funding

PA-107 EFFICACY STATUS OF ARTEMISININ-BASED COMBINATION TREATMENT OF FALCIPARUM MALARIA IN LAGOS, NIGERIA

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10.1136/bmjgh-2023-EDC.87

Background Artemisinin resistance is a major limitation against malaria control. Routine monitoring of the efficacy of artemisinin-based combination (ACT) treatment is required to ensure early detection and response to drug resistance. This research evaluated therapeutic response to directly observed treatment with artemether-lumefantrine (AL) in participants infected with uncomplicated falciparum malaria.
Methods The study was conducted in Ijede, a sentinel site in southwestern Nigeria. Microscopy, rapid diagnostic test and 18S ribosomal ribonucleic acid (rRNA) polymerase chain reaction (PCR) methods were used to diagnose Plasmodium falciparum. Primary outcomes were clinical and parasitological cure rates at day 28. Secondary outcomes included patterns of fever and parasite clearance. Parasite genotyping using merozoite surface proteins 1 and 2 markers was performed at baseline and at the time of recurrence of parasitaemia to differentiate between recrudescence and new infections.
Results Of the 79 participants enrolled, 58 completed the follow-up to day 28. Clinical observations and microscopy showed no early treatment failure whereas 18S rRNA PCR analysis identified parasite DNA in 37% (23/62) of participants followed up on day 3. However, this did not correspond to treatment failure in subsequent follow-up days. Based on Kaplan-Meier survival estimate, day 28 cumulative incidence of success of AL treatment was 96.6%.
Conclusion This finding demonstrates sustained in vivo efficacy of AL as first-line treatment of uncomplicated malaria in the study area. Investigations are underway for ex vivo genotyping of resistance markers to validate the efficacy status of ACT in this population.

PA-113 PHARMACOGENOMICS OF DRUG-DRUG INTERACTIONS IN MALARIA-HIV CON-INFECTIONS: EFFECTS ON GENERIC ARTEMETHER-LUMEFANTRINE THERAPY USED IN GHANA FOR MALARIA TREATMENT

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10.1136/bmjgh-2023-EDC.88

Background Malaria/HIV co-infection (MHC) is a public health challenge which may present with worse health outcomes due to interactions. Coadministration of artemether lumefantrine (ALU) and antiretroviral therapy may have potential drug-drug interactions that can affect the course of treatment for both diseases. Generic ALU medications are used in Ghana for malaria treatment after RDT or microscopy diagnosis. ALU is metabolized by the enzymes CYP2B6, CYP3A4/5, CYP2A6 and UGTs which can be affected by pharmacogenetics. A better understanding of the effects of MHC on ALU drugs could help prompt treatment, and control of malarial parasites among HIV-infected patients. This study evaluated effects of MHC on ALU drugs used in antimalarial treatment and pharmacogenetic influences on their efficacy.
Methods To compare metabolite profiles and treatment outcome in patients on generic ALU for uncomplicated malaria and MHC, this study has recruited about 218 participants. However, we currently have complete preliminary metabolite and genomic data on 52 participants. Blood was taken for

microscopy, genotyping using iPLEX Gold microarray and PCR-RFLP, and metabolite analysis using LC-MS/MS.
Results Median parasite density was 2119.42/uL, 760.10/uL, 0/uL and 0/uL on days 1,2,3 and 7 for malaria-only participants and 7322.52/uL, 3928.60/uL, 0/uL and 0/uL for MHC participants. Plasma concentrations of dihydroartemisinin (DHA) ranged from 3.30–35.85ng/ml. Desbutyl-lumefantrine (DBL) concentrations ranged from 7.8ng/ml-40.44ng/ml on days 3 and 7. Decreased concentrations of lumefantrine, DBL and DHA were observed across CYP2B6 *1/*1, CYP2B6 *1/*18/*1/*6, CYP3A5 *1/* and CYP3A5 *1/*3/*1/*6/1*/*7 carriers for MHC participants. However, MHC carriers of non-functional haplotypes CYP2B6*6/*6 or *6/*18 or *18/*18 showed increase in lumefantrine, DBL, artemether and DHA concentrations.
Conclusion Pharmacogenetic variations affected ALU plasma concentrations although blood parasites were eliminated by day 3 in malaria monoinfected and MHC participants. This however shows there is potential drug-drug interactions between ALU-ART components which can influence the progression of either disease.

PA-114 ADDRESSING CAUSES AND UNDERFUNDING OF NEGLECTED DISEASE OF LOW-INCOME COUNTRIES (LICS) SYNERGIZING NATIONAL AND EU FUNDING

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10.1136/bmjgh-2023-EDC.89

Background Despite a worldwide decrease, sub-Saharan Africa (sSA) still has high incidence and the highest percentage of under 5 deaths (55%) in the world. This is due to several causes, including high incidence of infectious disease, often neglected or underreported, lacking effective treatments or vaccines. During our activities on Typhoid fever, Sclavo Vaccines Association (SVA) and Fondazione Achille Sclavo (FAS) came across increasing evidences in sSA of marked morbidity and mortality due to an unreported disease in children and HIV patients: invasive Non-Typhoidal Salmonellosis (iNTS)
Methods SVA and FAS, two nonprofit Italian institutions devoted to supporting development of vaccines for LICs, committed to catalyze funds and a group of institutions to fight this disease of the most vulnerable. The institutions applied for national and European funding, receiving first a validation at the local level, followed by funding from the EC and EDCTP. This stepwise approach created the necessary know-how to prepare solid projects, supporting a valid candidate vaccine fit for use in LICs. The projects synergistically address reasons why this disease is neglected: low epidemiology knowledge and disease awareness, lack of candidate vaccines and financial commitments.
Results Two projects were rejected at the national and EU level: finally a grant was obtained in Italy from the Tuscany Region (S-Afrivac) concentrating on epidemiology, disease modeling and vaccine and assay development. The successful conclusion of this project worked to open doors for two EU grants: the H2020 EC Vacc-iNTS and the EDCTP Pedvac-iNTS projects. Within 4 years, these projects multiplied tenfold the funds devoted in the EU to iNTS vaccine development.
Conclusion The validation of targeted projects against neglected diseases at the national level followed by synergistic submission to European Agencies in appropriate calls addressing all causes of neglection may significantly increase success in fighting these modern plagues of LMICs

PA-117 DIGITIZATION OF RESEARCH ETHICS COMMITTEES IN AFRICA: VECTOR OF EFFICIENCY AND QUALITY

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10.1136/bmjgh-2023-EDC.90

Background Research is an essential component of the response to health challenges such as weak health care systems and high disease burden that Africa faces. In addition to these challenges, the advent of health emergencies has led to a significant increase in the number of protocols for review by Research Ethics Committees (RECs). The majority of RECs in Africa still use paper-based review systems with long lead times for authorization. Regarding the major role assigned and the desired efficiency of the CERs, the digitization of the protocol ethics review process is a necessity for scientific development.
Methods We conducted a literature review using key words related to the digitization of RECs in Africa and used the experiences of RECs in Benin that are in the process of digitization through to the AMELIORER Project (2021–2023) entitled "Enhancing Research Ethics and Regulatory Capacities in Benin" and funded by EDCTP (CSA2020ERC-3086).
Results The digitization of committees on the continent has brought light to their operations by facilitating dynamic and efficient ethics review. It has contributed to improving the quality of review through standardization and harmonization of ethics review procedures and reduction administrative workload and costs. However, RECs are facing digital learning challenges and technological capacity (availability of computer equipment and quality connectivity).
Conclusion For a more effective and dynamic research framework in Africa, it is essential to support RECs to implement and overcome the challenges inherent in the digitization process.

The funding source: CSA2020ERC-3086

PA-118 SAFETY MONITORING DURING MASS DRUG ADMINISTRATION: ADVERSE EVENTS FOLLOWING THE USE OF IVERMECTIN, DIETHYLCARBAMAZINE AND ALBENDAZOLE FOR THE CONTROL OF LYMPHATIC FILARIASIS IN KENYA

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10.1136/bmjgh-2023-EDC.91

Background In Kenya Mass Drug Administration (MDA) intervention with single dose of Diethylcarbamazine Citrate (DEC)