

Effects of treating helminths during pregnancy and early childhood on risk of allergy-related outcomes: Follow-up of a randomized controlled trial.

Namara B, Nash S, Lule SA, Akurut H, Mpairwe H, Akello F, Tumusiime J, Kizza M, Kabagenyi J, Nkurunungi G, Muhangi L, Webb EL, Muwanga M, Elliott AM.
Pediatr Allergy Immunol. 2017 Sep 11. doi: 10.1111/pai.12804.

ABSTRACT

BACKGROUND:

Helminth infections, common in low-income countries, may protect against allergy-related disease. Early exposure may be a key. In the Entebbe Mother and Baby Study, treating helminths during pregnancy resulted in increased eczema rates in early childhood. We followed the cohort to determine whether this translated to increased asthma rates at school age.

METHODS:

This randomized, double-blind, placebo-controlled trial, conducted in Entebbe, Uganda, had three interventions. During pregnancy, women were randomized, simultaneously, to albendazole vs placebo and to praziquantel vs placebo. Their children were independently randomized to quarterly albendazole vs placebo from age 15 months to 5 years. We here report follow-up to age 9 years. Primary outcomes at 9 years were recent reported wheeze, skin prick test positivity (SPT) to common allergens and allergen-specific IgE positivity to dust mite or cockroach. Secondary outcomes were doctor-diagnosed asthma and eczema rates between 5 and 9 years, recent eczema, rhinitis and urticaria at 9 years, and SPT and IgE responses to individual allergens.

RESULTS:

2507 pregnant women were enrolled; 1215 children were seen at age nine, of whom 1188 are included in this analysis. Reported wheeze was rare at 9 years (3.7%) while SPT positivity (25.0%) and IgE positivity (44.1%) were common. There was no evidence of a treatment effect for any of the three interventions on any of the primary outcomes.

CONCLUSIONS:

Prenatal and early-life treatment of helminths, in the absence of change in other exposures, is unlikely to increase the risk of atopic diseases later in childhood in this tropical, low-income setting.

Brief counselling after home-based HIV counselling and testing strongly increases linkage to care: a cluster-randomized trial in Uganda.

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J Int AIDS Soc. 2017 Oct;20(2). doi: 10.1002/jia2.25014.

ABSTRACT

INTRODUCTION:

The aim of this study was to determine whether counselling provided subsequent to HIV testing and referral for care increases linkage to care among HIV-positive persons identified through home-based HIV counselling and testing (HBHCT) in Masaka, Uganda.

METHODS:

The study was an open-label cluster-randomized trial. 28 rural communities were randomly allocated (1:1) to intervention (HBHCT, referral and counselling at one and two months) or control (HBHCT and referral only). HIV-positive care-naïve adults (≥ 18 years) were enrolled. To conceal participants' HIV status, one HIV-negative person was recruited for every three HIV-positive participants. Primary outcomes were linkage to care (clinic-verified registration for care) status at six months, and time to linkage. Primary analyses were intention-to-treat using random effects logistic regression or Cox regression with shared frailty, as appropriate.

RESULTS:

Three hundred and two (intervention, $n = 149$; control, $n = 153$) HIV-positive participants were enrolled. Except for travel time to the nearest HIV clinic, baseline participant characteristics were generally balanced between trial arms. Retention was similar across trial arms (92% overall). One hundred and twenty-seven (42.1%) participants linked to care: 76 (51.0%) in the intervention arm versus 51 (33.3%) in the control arm [odds ratio = 2.18, 95% confidence interval (CI) = 1.26-3.78; $p = 0.008$]. There was evidence of interaction between trial arm and follow-up time ($p = 0.009$). The probability of linkage to care, did not differ between arms in the first two months of follow-up, but was subsequently higher in the intervention arm versus the control arm [hazard ratio = 4.87, 95% CI = 1.79-13.27, $p = 0.002$].

CONCLUSIONS:

Counselling substantially increases linkage to care among HIV-positive adults identified through HBHCT and may enhance efforts to increase antiretroviral therapy coverage in sub-Saharan Africa.

HIV-1 transmission networks in high risk fishing communities on the shores of Lake Victoria in Uganda: A phylogenetic and epidemiological approach.

Kiwuwa-Muyingo S, Nazziwa J, Ssemwanga D, Ilmonen P, Njai H, Ndembu N, Parry C, Kitandwe PK, Gershim A, Mpendo J, Neilsen L, Seeley J, Seppälä H, Lyagoba F, Kamali A, Kaleebu P.

PLoS One. 2017 Oct 12;12(10):e0185818. doi: 10.1371/journal.pone.0185818. eCollection 2017.

ABSTRACT

BACKGROUND:

Fishing communities around Lake Victoria in sub-Saharan Africa have been characterised as a population at high risk of HIV-infection.

METHODS:

Using data from a cohort of HIV-positive individuals aged 13-49 years, enrolled from 5 fishing communities on Lake Victoriabetween 2009-2011, we sought to identify factors contributing to the epidemic and to understand the underlying structure of HIV transmission networks. Clinical and socio-demographic data were combined with HIV-1 phylogenetic analyses. HIV-1 gag-p24 and env-gp-41 sub-genomic fragments were amplified and sequenced from 283 HIV-1-infected participants. Phylogenetic clusters with ≥ 2 highly related sequences were defined as transmission clusters. Logistic regression models were used to determine factors associated with clustering.

RESULTS:

Altogether, 24% (n = 67/283) of HIV positive individuals with sequences fell within 34 phylogenetically distinct clusters in at least one gene region (either gag or env). Of these, 83% occurred either within households or within community; 8/34 (24%) occurred within household partnerships, and 20/34 (59%) within community. 7/12 couples (58%) within households clustered together. Individuals in clusters with potential recent transmission (11/34) were more likely to be younger 71% (15/21) versus 46% (21/46) in un-clustered individuals and had recently become resident in the community 67% (14/21) vs 48% (22/46). Four of 11 (36%) potential transmission clusters included incident-incident transmissions. Independently, clustering was less likely in HIV subtype D (adjusted Odds Ratio, aOR = 0.51 [95% CI 0.26-1.00]) than A and more likely in those living with an HIV-infected individual in the household (aOR = 6.30 [95% CI 3.40-11.68]).

CONCLUSIONS:

A large proportion of HIV sexual transmissions occur within house-holds and within communities even in this key mobile population. The findings suggest localized HIV

transmissions and hence a potential benefit for the test and treat approach even at a community level, coupled with intensified HIV counselling to identify early infections

Designing a course model for distance-based online bioinformatics training in Africa: The H3ABioNet experience.

Gurwitz KT, Aron S, Panji S, Maslamoney S, Fernandes PL, Judge DP, Ghouila A, Domelevo Entfellner JB, Guerfali FZ, Saunders C, Mansour Alzohairy A, Salifu SP, Ahmed R, Cloete R, Kayondo J, Ssemwanga D, Mulder N; H3ABioNet Consortium's Education Training and Working Group as members of the H3Africa Consortium.

PLoS Comput Biol. 2017 Oct 5;13(10):e1005715. doi: 10.1371/journal.pcbi.1005715. eCollection 2017 Oct.

ABSTRACT

Africa is not unique in its need for basic bioinformatics training for individuals from a diverse range of academic backgrounds. However, particular logistical challenges in Africa, most notably access to bioinformatics expertise and internet stability, must be addressed in order to meet this need on the continent. H3ABioNet (www.h3abionet.org), the Pan African Bioinformatics Network for H3Africa, has therefore developed an innovative, free-of-charge "Introduction to Bioinformatics" course, taking these challenges into account as part of its educational efforts to provide on-site training and develop local expertise inside its network. A multiple-delivery-mode learning model was selected for this 3-month course in order to increase access to (mostly) African, expert bioinformatics trainers. The content of the course was developed to include a range of fundamental bioinformatics topics at the introductory level. For the first iteration of the course (2016), classrooms with a total of 364 enrolled participants were hosted at 20 institutions across 10 African countries. To ensure that classroom success did not depend on stable internet, trainers pre-recorded their lectures, and classrooms downloaded and watched these locally during biweekly contact sessions. The trainers were available via video conferencing to take questions during contact sessions, as well as via online "question and discussion" forums outside of contact session time. This learning model, developed for a resource-limited setting, could easily be adapted to other settings.

Soccer-based promotion of voluntary medical male circumcision: A mixed-methods feasibility study with secondary students in Uganda.

A mixed-

Miiró G, DeCelles J, Rutakumwa R, Nakiyingi-Miiró J, Muzira P, Ssembajjwe W, Musoke S, Gibson LJ, Hershow RB, Francis S, Torondel B, Ross DA, Weiss HA; MENISCUS project. **PLoS One.** 2017 Oct 9;12(10):e0185929. doi: 10.1371/journal.pone.0185929. eCollection 2017.

ABSTRACT

The Ugandan government is committed to scaling-up proven HIV prevention strategies including safe male circumcision, and innovative strategies are needed to increase circumcision uptake. The aim of this study was to assess the acceptability and feasibility of implementing a soccer-based intervention ("Make The Cut") among schoolboys in a peri-urban district of Uganda. The intervention was led by trained, recently circumcised "coaches" who facilitated a 60-minute session delivered in schools, including an interactive penalty shoot-out game using metaphors for HIV prevention, sharing of the coaches' circumcision story, group discussion and ongoing engagement from the coach to facilitate linkage to male circumcision. The study took place in four secondary schools in Entebbe sub-district, Uganda. Acceptability of safe male circumcision was assessed through a cross-sectional quantitative survey. The feasibility of implementing the intervention was assessed by piloting the intervention in one school, modifying it, and implementing the modified version in a second school. Perceptions of the intervention were assessed with in-depth interviews with participants. Of the 210 boys in the cross-sectional survey, 59% reported being circumcised. Findings showed high levels of knowledge and generally favourable perceptions of circumcision. The initial implementation of Make The Cut resulted in 6/58 uncircumcised boys (10.3%) becoming circumcised. Changes made included increasing engagement with parents and improved liaison with schools regarding the timing of the intervention. Following this, uptake improved to 18/69 (26.1%) in the second school. In-depth interviews highlighted the important role of family and peer support and the coach in facilitating the decision to circumcise. This study showed that the modified Make The Cut intervention may be effective to increase uptake of safe male circumcision in this population. However, the intervention is time-intensive, and further work is needed to assess the cost-effectiveness of the intervention conducted at scale.

HIV drug resistance in African infants and young children newly diagnosed with HIV: a multicounty analysis.

Jordan MR, Penazzato M, Cournil A, Vubil A, Jani I, Hunt G, Carmona S, Maphalala G, Mthethwa N, Watera C, Kaleebu P, Chakanyuka Musanhu C, Mtapuri-Zinyowera S, Dzangare J, Peeters M, Yang C, Parkin N, Bertagnolio S.

Clin Infect Dis. 2017 Aug 8. doi: [10.1093/cid/cix698](https://doi.org/10.1093/cid/cix698).

ABSTRACT

BACKGROUND:

Prevention of mother-to-child transmission (PMTCT) of HIV programs have been scaled-up in many low- and middle-income countries; however, HIV drug resistance (HIVDR) data amongst HIV-1-infected young children remain limited.

METHODS:

Surveys of pre-treatment HIVDR amongst children younger than 18 months of age who were diagnosed with HIV through Early Infant Diagnosis were conducted in five sub-Saharan African countries (Mozambique, Swaziland, South Africa, Uganda, and Zimbabwe) between 2011 and 2014 following World Health Organization guidance. De-identified demographic and clinical data were used to explore risk factors associated with non-nucleoside reverse transcriptase inhibitor (NNRTI) resistance.

RESULTS:

Among the 1,450 genotypes analyzed, 1,048 had accompanying demographic and clinical data. The median age of children was 4 months; 50.4% were female. HIV from 54.1% showed resistance to one or more antiretroviral drug, with 53.0% and 8.8% having resistance to one or more NNRTI or nucleoside reverse transcriptase inhibitor, respectively. NNRTI resistance was particularly high in children exposed to antiretroviral drugs through PMTCT; adjusted odds ratios 1.8 (95% confidence interval (CI): 1.3 - 2.6) for maternal exposure only and 2.4 (CI: 1.6 - 3.6) for neonatal exposure only.

CONCLUSIONS:

Protease inhibitor-based regimens in children younger than three years are currently recommended by WHO but the implementation of this recommendation is suboptimal. These results reinforce the urgent need to overcome barriers to scale-up of pediatric protease inhibitor-based regimens in sub-Saharan Africa and underscore the need to accelerate the study and approval of integrase inhibitors for use in young children.

Perceptions about interventions to control schistosomiasis among the Lake Victoria island communities of Koome, Uganda.

Sanya RE, Tumwesige E, Elliott AM, Seeley J.

PLoS Negl Trop Dis. 2017 Oct 2;11(10):e0005982. doi: 10.1371/journal.pntd.0005982. eCollection 2017 Oct.

ABSTRACT

BACKGROUND

Praziquantel-based mass treatment is the main approach to controlling schistosomiasis mansoni in endemic areas. Interventions such as provision and use of safe water, minimising contact with infested water, disposal of stool in latrines and snail control provide key avenues to break the transmission cycle and can sustain the benefits of mass treatment in the long term. Efforts are also being made to develop a schistosomiasis vaccine which, if effective, might reduce the incidence of re-infection after treatment. However, any interventions deployed need to be acceptable to, and sustainable by, the target communities.

METHODS

In this qualitative study, we investigated the perceptions of six Lake Victoria island communities of Koome, Uganda, about interventions to control *Schistosoma mansoni* infection and their willingness to participate in *Schistosoma* vaccine trials. Thirty-two in-depth interviews, 12 key informant interviews and 10 focus group discussions were conducted. Data were analysed using a thematic content approach.

FINDINGS

Intestinal schistosomiasis was not regarded as a serious health problem because a mass treatment programme is in place. However, the communities lack safe water sources and latrines. Mass treatment with praziquantel, safe water supplies and use of toilets were deemed the most acceptable interventions by the participants. The communities are willing to participate in *Schistosoma* vaccine trials.

CONCLUSION/SIGNIFICANCE:

Knowledge of a community's perception about interventions to control schistosomiasis can be valuable to policy makers and programme implementers intending to set up interventions co-managed by the community members. In this study, the views of the Lake Victoria island communities of Koome are presented. This study also provides data to guide further work on alternative interventions such as *Schistosoma* vaccine trials in these communities.

Men's involvement in a parenting programme to reduce child maltreatment and gender based violence: formative evaluation in Uganda.

Siu, G.E., Wight, D., Seeley, J., Namutebi, C., Sekiwunga, R., Zalwango, F. and Kasule, S.

The European Journal of Development Research. Doi: [10.1057/s41287-017-0103-6](https://doi.org/10.1057/s41287-017-0103-6).

Abstract

Parenting programmes involving fathers can reduce child maltreatment and gender-based violence. However, most parenting programmes find it difficult to recruit fathers. We piloted a 21 session parenting intervention, 'Parenting for Respectability', with fathers and mothers near Kampala, Uganda. Sixty-one fathers and 83 mothers were recruited initially and 52 fathers and 76 mothers retained to the end. We interviewed with 24 fathers and 16 mothers. Data were analysed thematically. Success in involving fathers was probably due to (a) the first 10 sessions being father-only, allowing them to share experiences before participating in mixed-sex sessions; (b) exploiting men's pre-existing motivation to improve their children's behaviour, thereby enhancing family respectability; and (c) the interactive, participatory delivery. Mixed sessions enabled couples to clarify conflicting perspectives regarding spousal relationships and gendered norms. However, men experienced social pressure to conform to conventional masculinity, suggesting the need to instill intervention values at community level.

Assessment of the Combined Effect of Epstein-Barr Virus and Plasmodium falciparum Infection on Endemic Burkitt Lymphoma Using a Multiplex Serological Approach.

Aguilar R, Casabonne D, O'Callaghan-Gordo C, Vidal M, Campo JJ, Mutalima N, Angov E, Dutta S, Gaur D, Chitnis CE, Chauhan V, Michel A, de Sanjosé S, Waterboer T, Kogevinas M, Newton R, Dobaño C.

Front Immunol. 2017 Oct 26;8:1284. doi: [10.3389/fimmu.2017.01284](https://doi.org/10.3389/fimmu.2017.01284). eCollection 2017.

Abstract

Epstein-Barr virus (EBV) is a necessary cause of endemic Burkitt lymphoma (eBL), while the role of *Plasmodium falciparum* in eBL remains uncertain. This study aimed to generate new hypotheses on the interplay between both infections in the development of eBL by investigating the IgG and IgM profiles against several EBV and *P. falciparum* antigens. Serum samples collected in a childhood study in Malawi (2005-2006) from 442 HIV-seronegative children (271



eBL cases and 171 controls) between 1.4 and 15 years old were tested by quantitative suspension array technology against a newly developed multiplex panel combining 4 EBV antigens [Z Epstein-Barr replication activator protein (ZEBRA), early antigen-diffuse component (EA-D), EBV nuclear antigen 1, and viral capsid antigen p18 subunit (VCA-p18)] and 15 *P. falciparum* antigens selected for their immunogenicity, role in malaria pathogenesis, and presence in different parasite stages. Principal component analyses, multivariate logistic models, and elastic-net regressions were used. As expected, elevated levels of EBV IgG (especially against the lytic antigens ZEBRA, EA-D, and VCA-p18) were strongly associated with eBL [high vs low tertile odds ratio (OR) = 8.67, 95% confidence interval (CI) = 4.81-15.64]. Higher IgG responses to the merozoite surface protein 3 were observed in children with eBL compared with controls (OR = 1.29, 95% CI = 1.02-1.64), showing an additive interaction with EBV IgGs (OR = 10.6, 95% CI = 5.1-22.2, $P = 0.05$). Using elastic-net regression models, eBL serological profile was further characterized by lower IgM levels against *P. falciparum* preerythrocytic-stage antigen CelTOS and EBV lytic antigen VCA-p18 compared with controls. In a secondary analysis, abdominal Burkitt lymphoma had lower IgM to EBV and higher IgG to EA-D levels than cases with head involvement. Overall, this exploratory study confirmed the strong role of EBV in eBL and identified differential IgG and IgM patterns to erythrocytic vs preerythrocytic *P. falciparum* antigens that suggest a more persistent/chronic malaria exposure and a weaker IgM immune response in children with eBL compared with controls. Future studies should continue exploring how the malaria infection status and the immune response to *P. falciparum* interact with EBV infection in the development of eBL.