(78.0%) could correctly state how ACT could be used in management malaria in children under five.

Conclusion: Due to high level of unacceptability and affordability ACT adoption for management of malaria in children less than five years is still at startling level among their mothers. However, ACT drugs should be made acceptable, affordable and available by government and partners in management of malaria among children in Africa.

http://dx.doi.org/10.1016/j.ijid.2014.03.1032

Type: Poster Presentation

Final Abstract Number: 55.007
Session: Pediatric and Perinatal Infections
Date: Friday, April 4, 2014
Time: 12:45-14:15
Room: Ballroom

APOBEC3G and G-to-A hypermutation in Asian children with different HIV/AIDS disease progression

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Background: APOBEC3G potently controls HIV replication by introducing G-to-A hypermutation. Genetic variants of *APOBEC3G*, 186H/R is associated with HIV/AIDS disease progression in adults. However, the details of its effect in children remain unclear.

Methods & Materials: Rapid progressors (RPs) was defined as children who had AIDS-related symptoms (PCP, HIV encephalopathy) before their second birthday. Long-term non-progressors (LTNPs) were defined as children, aged>8 years, maintaining CD4%≥25%, and without cART. RPs and LTNPs were of 630 perinatally infected children who were enrolled in the multicenter studies of Thailand and Cambodia.

APOBEC3G genotypes were determined by PCR-restriction fragment length polymorphism method using genomic DNA samples. APOBEC3G-mediated hypermutations were analyzed by sequencing of the *vif*/*vpu* genes from proviral DNAs.

Results: A total of 14 RPs and 24 LTNPs were enrolled. 50% of RP and 67% of LTNP were female (p=0.3). Median ages at sample collection were 11.6 (4.7-15.1) years and 11.3 (10.0-12.3) years (p=0.3), for the RPs and LTNPs, respectively. In the RP group, median age at the first AIDS-related symptom was 0.7 (0.4-1.2) years.

Frequency of *APOBEC3G 186H/R* genotypes, AA:AG:GG, in the RPs was 100:0:0% whereas 83:17:0% (p=0.3) in the LTNPs. Hypermutation of the *vif*-coding region were observed in none of the RP and 12% of the LTNP (p=0.5). In contrast, hypermutations at the *vpu* genes were not detected in both groups' proviral DNAs.

Conclusion: We observed no significant associations of the *APOBEC3G* genotypes and G-to-A hypermutation rates between Asian children with different profiles of HIV/AIDS disease progression.

http://dx.doi.org/10.1016/j.ijid.2014.03.1033

Type: Poster Presentation

Final Abstract Number: 55.008
Session: Pediatric and Perinatal Infections
Date: Friday, April 4, 2014
Time: 12:45-14:15
Room: Ballroom

Safety of atazanavir/ritonavir with tenofovir disoproxil fumarate in HIV-infected adolescents

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Background: Atazanavir/ritonavir(ATV/r) and tenofovir disoproxil fumarate(TDF) are recommended once-daily antiretroviral therapy, particularly for second-line therapy. Their concomitant use can lead to decrease in ATV and increase in TDF plasma concentration. There are limited data of efficacy and safety of their co-administration in children and adolescents.

Methods & Materials: Nineteen HIV-infected Thai children aged 6-18years, body weight 25-50 kg, and total bilirubin<2 mg/dL were enrolled. They were either PI-experienced with HIV-RNA<50copies/ml or PI-naïve with HIV-RNA≥1,000copies/ml. ATV(Reyataz®) 200 mg/capsule with generic ritonavir 100 mg/tablet, produced by the Thai Government Pharmaceutical Organization, were co-administered with TDF and lamivudine once daily. CD4, HIV-RNA, total bilirubin, creatinine, lipids, lumbar

spine bone mineral density(BMD) were performed at baseline and week 48.

Results: Fifty-eight% were female. The median(IQR) age was 13.6(11.9–14.7) years, body weight was 34.9(30.5–39.7) kg and CD4 was 670(540–1233)cells/mm^3. At screening, 17 children used lopinavir/ritonavir-based regimen with lamivudine(82%), zidovudine(47%), didanosine(41%), and TDF(18%) and 2 were PI-naïve.

At week 48, median CD4 was 710(557-1051) cells/mm^3 (p=0.8). HIV-RNA<50copies/ml were observed in 84% of children[15/17 of PI-experienced and 1/2 of PI-naive children].

No serious adverse event was reported. Mean total bilirubin rose from 0.7 mg/dL at baseline to 1.5 mg/dL at week 48 (p<0.001), with 32% of children having levels >2 mg/dL (p=0.03). Proportion of children with creatinine clearance by Schwartz formula < 90 mL/min/1.73m^2 rose from 11% at baseline to 67% t week 48 (p<0.01). However, none had creatinine clearance <60 mL/min/1.73m^2.

Proportion with triglyceride>130 mg/dL declined from 53% to 21% (p=0.03). The other lipid markers were unchanged. Lumbar spine BMD Z-score at baseline was -1.40 (0.93) and at week 48 was 0.72 (0.10) (p=0.1). Proportion with lumbar spine BMD Z-score< -1.5 at baseline vs. week 48 was 56% vs. 68% (p=0.50). Proportion with lumbar spine BMD Z-score< -2.0 at baseline vs. week 48 was 25% vs. 44% (p=0.25).

Conclusion: Second-line atazanavir/ritonavir 200/100 mg with TDF and lamivudine was effective. However, the clinical impact of the total bilirubin rise and the creatinine clearance decline requires long-term monitoring.

http://dx.doi.org/10.1016/j.ijid.2014.03.1034

Type: Poster Presentation

Final Abstract Number: 55.009
Session: Pediatric and Perinatal Infections
Date: Friday, April 4, 2014
Time: 12:45-14:15
Room: Ballroom

Prevalence and interaction of malaria and helminth co-infections among symptomatic and asymptomatic children in Southwest Nigeria

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Background: Malaria and intestinal helminth infections are common tropical diseases in developing countries. Little is understood about their interaction when they coexist. Some workers reported that helminth infected individuals are susceptible to plasmodium infection while others did not. We therefore investigated the effect of co-infection of helminth and *Plasmodium* infections among children.

Methods & Materials: Asymptomatic school children (304) with age range 3-10 years and febrile children (495) with age range 1- 10 years were recruited from selected primary schools and outpatient clinic of Adeoyo Hospital, Ibadan, Nigeria. Blood samples were obtained from each subject and used for haematocrit determination and Giemsa stained smears that were used for malaria parasite screening by microscopy. Stool samples were also collected and used for helminth diagnosis done by Kato-Katz method. All subjects were clinically examined and personal details documented in a case record forms.

Results: Among the school children, 142 (46.7%) were positive for malaria, 181 (59.5%) had helminth only (*Ascaris lumbricoides*, AL - 43.1%, *Trichuris trichiura* TT -2.3% and AL/TT - 14.1%), while 57 (18.8%) had co-infection of helminth and *Plasmodium*. Among the febrile children, 116 (23.4%) were positive for malaria, 45 (9.1%) for worms only (AL- 7.3%, TT- 0.2%, AL/TT- 1.4%, *Taenia spp* - 0.2%) while 16 (3.2%) had co-infection of malaria and helminth. Among asymptomatic children, *Plasmodium* infection was significantly (P<0.05) reduced in helminth positive relative to helminth negative. Whereas the opposite was the case among febrile children, as *Plasmodim* infection was increased in helminth positive relative to helminth negative.. Anaemia was significantly higher in *Plasmodium* infection alone compared with those with helminth infection. *A. lumbricoides* was the most prevalent helminth.

Conclusion: The prevalence of helminth and Plasmodium coinfection was markedly higher among asymptomatic than symptomatic children. Plasmodium was negatively and positively associated with helminth infection in asymptomatic and febrile children respectively. Work on the immunological interplay during the course of the infections is still in progress.

http://dx.doi.org/10.1016/j.ijid.2014.03.1035

Type: Poster Presentation

Final Abstract Number: 55.010
Session: Pediatric and Perinatal Infections
Date: Friday, April 4, 2014
Time: 12:45-14:15
Room: Ballroom

Anthropometric changes in school children on moringa oleifera nutrient supplement in Nigeria

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Background: The important factors that influence growth of children are nutrition and infection. The best method of assessing the health and nutrition of the individual child is by longitudinal monitoring of growth. *Moringa oleifera* is documented to improve nutrition. Its effect on nutritional status of children and rate of re-infection with helminth parasite in a rural school was assessed.

Methods & Materials: The study location was in Anambra State, Nigeria. The design was randomized quasi longitudinal study. A total of 144 pupils aged 2 to 6 years from two primary schools were randomly selected. Thereafter their anthropometry, haemoglobin and stool examined. They were dewormed using 400 mg of Albendazole before being fed daily (five times a week) with Standardized Jollof Rice (SJR) as lunch packs prepared by the dietician to meet 1/3rd WHO nutritional daily allowance, served with 25 g of National Agency for Food and Drug Administration and Control (NAFDAC) approved *Moringa oleifera* leaf powder (MOLP). Lunch packs without MOLP served as controls. Data collected were analysed using