Type: Poster Presentation

Final Abstract Number: 42.026
Session: HIV/AIDS and Other Retroviruses
Date: Thursday, April 3, 2014
Time: 12:45-14:15
Room: Ballroom

Dyslipidemia among HIV/AIDS patients receiving antiretroviral therapy: A prospective observational study

A. Biswas*, K. Suneesh, P. Sohal, S. Sharma

AIIMS, New Delhi, India

Background: Dyslipidemia due to Antiretroviral Therapy among HIV/AIDS increases cardiovascular risk and high morbidity and mortality. This study was conducted to estimate the incidence of dyslipidemia for prevention, control and proper management to reduce cardiovascular risks and death.

Methods & Materials: We conducted a prospective observational study among HIV/AIDS patients those who were initiated Antiretroviral Therapy (ART) medication. The US NCEP III (National Cholesterol Education Program – III) guidelines were used to define dyslipidemia. Fasting Lipid profile was estimated at 0 month, 6th month and at 12th month from the date of enrolment. Our primary observation was to determine the change in fasting serum lipid levels higher than border line as per the NCEP-III guideline. We used linear regression to experience change in lipid levels controlling for base line lipid values, demographic and clinical characteristics.

Results: We enrolled 135 patients for the study. There were 65.9% (89) male,34.1% (46) female, mean age 37 years(SE-0.8) and 6.7% (9) were unmarried. Most of the patients 63.7% (86) had heterosexual transmission. 22.96% (31) had unknown history and 12.6% (17) through blood transfusion. In our study 3 drugs combination ART was given and 30% (40) of the these were receiving Stavudine based ART regimen(d4T + 3TC + NVP/EFV), 70%(95) Zydovudine based regimen (AZT + 3TC + NVP/EFV). Overall incidence of dyslipidemia (high total cholesterol > 239 mg/dl) was 25% (26). Among Stavudine based regimen 15%(6) had incidence of dyslipidemia (high cholesterol). Incidence of dyslipidemia was detected among 22.8% (23) due to high LDL-C (>159 mg/dl). Among Stavudine based regimen 17.5% (7) of patients developed dyslipidemia (high LDL-C). High triglyceride (TG > 299 mg/dl) was detected among 8.2% (9). Total mortality was 6.6% (9), lost to follow up were 11.8% (16). At 6 months of follow up 6 (5%) patients developed dyslipidemia (high cholesterol) and were referred for the management with lipid lowering agents.

Conclusion: Incidence of Dyslipidemia at 6th month was 5% and at 12th month was 25% .The incidence of high LDL-C was 22.8%, among Stavudine regimen was 17.5% and high TG was 8.2% over one year with ART. However in our study Stavudine based regimen was found to have 15% incidence of dyslipidemia.

http://dx.doi.org/10.1016/j.ijid.2014.03.698

Type: Poster Presentation

Final Abstract Number: 42.027
Session: HIV/AIDS and Other Retroviruses
Date: Thursday, April 3, 2014
Time: 12:45-14:15
Room: Ballroom

Ion PGM deep sequencing improves mutation detection in infants who failed PMTCT

R.G. Fisher[1,*], S. Kosakovsky Pond[2], B. Murrel[2], R. Slabbert[1], C. Edson[3], M.F. Cotton[4], R. Haubrich[2], D. Smith[2], G. van Zyl[4]

[1] *Stellenbosch University, Cape Town, South Africa*
[2] *University of California, San Diego, San Diego, USA*
[3] *University of Stellenbosch, Cape Town, WP, South Africa*
[4] *University of Stellenbosch, Cape Town, South Africa*

Background: In children who are HIV-infected despite a nevirapine (NVP) containing HIV-PMTCT regimen, bulk sequencing reliably detects major variant drug resistance mutations (DRM) (>20-30% of viral population). Ion Personal Genome Machine (Ion PGM) deep sequencing, combined with rigorous analysis and error correction may be an alternative with increased sensitivity, enabling detection of potentially clinically significant minor DRM variants.

Methods & Materials: We conducted a retrospective study in 20 HIV-infected infants, born from Oct 2006 to Oct 2009, who failed PMTCT (maternal AZT from 28 weeks gestation, intra partum NVP, and neonatal single dose NVP with 7 days, AZT). Baseline specimens, before combination antiretroviral therapy (cART), were bulk sequenced using in-house genotyping. For Ion PGM sequencing, extracted RNA was reverse transcribed using random pentadecamers, before amplification through 14 pre- and 7-nested PCR's. PCR products were enzymatically fragmented and ligated to indexing bar-codes, followed by enrichment and sequencing. Reads were filtered using quality scores, aligned to a subtype C reference sequence using a codon-aware version of the Smith-Waterman algorithm, correcting for homopolymer errors. A mixture of multinomials probabilistic model was used to distinguish sequencing error from true minor variants with posterior probabilities ≥99.99%, excluding bases identified as errors. For each sample, we computed the mean of all pairwise Tamura-Nei 93 distances between reads with at least 100 overlapping base pairs to quantify nucleotide diversity.

Results: Median age was 3.5 (IQR: 2.4-4.8) months, median viral load and CD4% was 5.8 log copies/ml (IQR: 5.1-6.3) and 26% (IQR: 22-35%) respectively; 65% were female. Median coverage for reverse transcriptase positions 40 - 230 (including all major ARV-DRM) was 31000 (IQR: 20400-39500) and median intra-sample nucleotide diversity was 0.6% (IQR: 0.4%-1.2%). Bulk sequencing detected one NNRTI DRM in 2 patients: K103N and Y181I. Ion PGM detected DRM at a frequency ≥ 2% in 2 additional patients: K103N (22%) and Y181C (2%), respectively, and minor variant Y181C (3.7%) in addition to K103N (detected by bulk sequencing) in a third. No AZT-associated DRM were detected.

Conclusion: Only 20% of infants had NVP associated DRM ≥2% frequency by deep sequencing. When combined with a bioinformatic pipeline, Ion PGM deep sequencing detected more NVP-DRMs in infants with PMTCT exposure than bulk sequencing. This method could be valuable when considering recycling

NVP or the use of second-generation NNRTIs in cART regimens.

http://dx.doi.org/10.1016/j.ijid.2014.03.699

Type: Poster Presentation

Final Abstract Number: 42.028
Session: HIV/AIDS and Other Retroviruses
Date: Thursday, April 3, 2014
Time: 12:45-14:15
Room: Ballroom

Low number of second-line HAART switched patients among children in Buikwe, Uganda, community-based health program

B. Silharova[1,*], Z. Kuranova[1], L. Vojtasova[1], J. Suvada[1], G. Mikolasova[2], N. Kulkova[3], V. Krcmery[4]

[1] *St. John Paul Pediatric Clinic, Buikwe, Uganda*
[2] *St. Elisabeth University College of Health Care and Social Sciences, Bratislava, Slovakia*
[3] *Trnava University in Trnava; St. Elisabeth University, Bratislava, Slovakia*
[4] *St. Elizabeth University College of Health and Social Sciences, Bratislava, Slovakia*

Background: About 20% of all children on antiretroviral therapy (ART) exhibit resistance to 1-3 antiretrovirals in 2-5 years after starting and require therefore 2nd line treatment. Purpose of this study was to assess the proportion and risk factors of second line ARV in children who failed on 1st line ART in Buikwe, Uganda.

Methods & Materials: One hundred and sixty two (n = 162) patients who were enrolled into the program since October 2012 to June 2013, into the community-based health program run by St. John Paul's Paediatric Clinic in Buikwe, Uganda were analysed to assess risk factors, demographic and clinical characteristics. After two years, only those (n = 107) patients who were still on ART were included for analysis.

Results: Majority of patients enrolled in the program were still on 1st line therapy after 2 years of follow-up (104; 97,2%). Regarding regimens, 38 (36,5%) are receiving azidothymidine/lamivudine/nevirapine (AZT/3TC/NVP), 31 (29,8%) receiving tenofovir/3TC/efavirenz (TDF/3TC/EFV), 9 (8,7%) receiving AZT/3TC/EFV and one (1%) receiving TDF/3TC/NVP. Three of 107 (2,8%) children had to switch to 2nd line ART due to clinical (2) and/or immunological (1) failure, both accompanied with the increase of viral load. Non-compliance was the commonest risk factor in all cases.

Conclusion: Failure rate in children and adolescents on ART in Uganda was very low after 2 years of follow up. Majority of patients on 1st line receive AZT/3TC/NVP or AZT/3TC/EFV and the rest TDF/3TC/EFV or TDF/3TC/NVP. Noncompliance was the major risk factor, followed by the failure of 1st line therapy. droup out from the community, and the change of treatment centre.

http://dx.doi.org/10.1016/j.ijid.2014.03.700

Type: Poster Presentation

Final Abstract Number: 42.029
Session: HIV/AIDS and Other Retroviruses
Date: Thursday, April 3, 2014
Time: 12:45-14:15
Room: Ballroom

Quality audit of rapid HIV diagnostic processes and outcomes in selected health facilities in the central region of Ghana

N.A.A. Ntim*, K.M. Nyarko

School of Public Health, University of Ghana, Accra, Ghana

Background: Human immunodeficiency virus (HIV) is one of the leading infectious killers worldwide. An estimated 34.2 million people worldwide were living with HIV in 2011 with about 60% of the HIV infections occur in sub-Saharan Africa. Testing to know one's HIV status is a key intervention to the prevention and early treatment of cases. The introduction of rapid HIV test kits has increased access to HIV testing. The rapid HIV test although easy to do after proper training by both laboratory and non-laboratory persons requires a quality assurance system in place to prevent errors and ensure the accuracy and reliability of test results. This study set out to compare rapid HIV test results from both laboratory and non-laboratory staff, to assess the knowledge of the testing staff on the dry tube specimen proficiency testing (DTSPT) scheme and to assess the competency of the testing staff.

Methods & Materials: We conducted a cross sectional study on 240 pregnant women who had been rapidly tested for HIV in four antenatal clinics in the Central Region of Ghana. Participants were enrolled after informed consenting. Venous blood sample (3 ml) was taken and retested in the laboratory using the same rapid HIV test (First response and Oraquick ½) kits. A questionnaire on the dry tube specimen proficiency testing scheme was administered to all testing staff. A site audit checklist was used to assess staff competency. Using Excel and SPSS, the sensitivity, specificity, positive and negative predictive values, frequencies and proportions were calculated.

Results: High concordance between laboratory (100%) and non-laboratory (99.6%) rapid HIV test results. There was one (0.4%) discordant test result between the two groups. Majority (80%) of both groups of testing staff did not have any knowledge of the dried tube specimen proficiency testing scheme. Staffs (100%) were competent to perform and interpret test results. Three (75%) of the health facilities did not have rapid test kits to provide VCT to clients.

Conclusion: No significant difference between test performed by laboratory and non-laboratory persons. Knowledge of the DTSPT scheme was poor. Staffs were competent to use the rapid HIV test kits correctly.

http://dx.doi.org/10.1016/j.ijid.2014.03.701