

**POSTER 60****PREVALENCE OF DRUG RESISTANCE IN HIV-1 SUBTYPE C-INFECTED CHILDREN FAILING ANTIRETROVIRAL THERAPY IN SOUTH AFRICA**

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Emergence of drug resistance is a significant challenge for the widespread use of highly active antiretroviral therapy (HAART) in management of HIV infection. Few data is available on drug resistance profiles of treated children in resource-limited settings. Here we describe the prevalence of drug resistance mutations (DRM) among HIV-1C infected children failing HAART. 37 paediatric patients failing HAART were recruited in Durban, KwaZulu-Natal, South Africa. 30 patients had received two nucleoside reverse transcriptase inhibitors (NRTIs) and 1 nonnucleoside reverse transcriptase inhibitor (NNRTI); 6 children had received a protease inhibitor and two NRTIs. The ViroSeq genotyping system and Stanford resistance database were used for determining DRM. Analyses were performed using the Student's T test or the Mann-Whitney U Test as appropriate. Median (range) age, nadir CD4%,  $\log_{10}$  HIV viral load and duration of treatment were 7.7 years (1.0 to 13.8), 10% (0.4-31.0), 4.9 copies/ml (2.8-6.6) and 29.2 months (10.1-48.9), respectively. Phylogenetic analysis of the *pol* region showed that all viral isolates were HIV-1C. At least one major DRM to any class of drug was detected in 84% of the children. The most frequently detected NRTI DRMs were M184V (73%), K219E/Q/R/N (41%), K70R (35%), D67N (32%), M41L (19%) and T215Y (16.0%). The most frequently detected NNRTI DRMs were K103N (38%), V106M (38%), Y181C (16%), G190A/S (16%), P225H (16%) and F227L (16%). Thymidine analogue mutations (TAMs) were found in 54% of the children and three or more TAMs were detected in 38% of the patients. Duration of treatment was significantly associated with having 3 or more TAMs compared to less than 3 TAMs ( $p=0.0322$ ). In summary, the emergence of drug resistance was evident in at least 80 % of children. A higher lever of TAMs was observed than previously described and possession of three or more TAMS was associated with increased length of treatment. Our results on the high levels and the patterns of DRM in children highlight the potential problem in future choices for second line/continued therapy for children in resource-poor settings. There is a need for increased monitoring and adherence counseling in children receiving HAART to reduce the incidence of DRM.