SUMMARY

Introduction

The use of Highly Active Antiretroviral Therapy (HAART) has dramatically improved the quality of life and has reduced the morbidity and mortality of individuals infected with Human Immune Deficiency Virus (HIV). However, antiretroviral drug resistance has become a major challenge to successful antiretroviral therapy.

This study was conducted at the HIV Clinic of the Jos University Teaching Hospital between July and December, 2010 to determine the prevalence, pattern and factors associated with antiretroviral (ARV) drug resistance in patients failing first line ARV drugs.

Methodology

It was a descriptive cross-sectional study; patients failing first line antiretroviral therapy were randomly recruited. Socio-demographic, clinical and laboratory data including genotypic drug resistance mutations were analysed.

Results
One hundred patients were enrolled, with a mean age of 41±9 years. There were 41 (41%) males and 59 (59%) females. Median CD4+ cell count and HIV viral loads were 45cells/ ml3 and 81,615 copies/ml, respectively. The median duration on ARV drugs was 7 months. The overall prevalence of ARV drug resistance genotypic mutations was 82%. Eight percent (8%) of the study population had resistance mutation to only one ARV drug, 44% had mutations to two ARV drugs while 30% of the study population had mutations to all the three ARVs of their regimens, respectively. The commonest Nucleoside Reverse Transcriptase Inhibitor (NRTI) mutation was M184V (68%). Thymidine Analogue Mutations 1 pathway (TAM 1 pathway) frequently seen in subtype B treated patients were relatively of lower frequencies {T215Y (9%), M41L (9%), L210W (4%)}, as compared to a higher frequencies of Thymidine Analogue 2 pathway (TAM 2 pathway) which are less frequently seen in subtype B treated patients {T215F (13%), D67N (11%), K70R (11%) and K219Q (7%)}. Common non-nucleoside reverse transcriptase inhibitors mutations seen include: Y181C (37%), K103N (35%), A98G 23%, G190A (20%) and K101E (16%).

**Conclusion**

The prevalence of antiretroviral drug resistance mutations in patients failing first-line ARV drugs in Jos is high. The commonest Nucleoside Reverse Transcriptase Inhibitor (NRTI) mutation was M184V. There is a high resistance mutations profile
to Nevirapine and this confers resistance to efavirenz and Etravirine, which suggests that sequential NNRTI use including Etravirine, may not be an option in Non-Subtype B virus when a patient develops resistance mutations to one NNRTI.