4 TUBERCULOSIS and HIV

b Prospective sentinel surveillance of human immunodeficiency virus related drug resistance

South Africa has the world's largest antiretroviral (ARV) program. Approximately 3 million South Africans had started ARV therapy (ART) by 2015, predominantly using standardised ARV combinations. Routine testing for HIV drug resistance (HIVDR) is performed following protease inhibitor-based regimen failure (Regimen 2) only, as a prerequisite for access to 3rd-line regimen selection. Surveillance of HIVDR is essential to inform programmatic decisions as to regimen efficacy, and/or the need for enhanced diagnostics. The NICD established an integrated TB-HIV surveillance study in 2014/15 by building on the GERMS-SA hospital-based enhanced surveillance platform. This study introduced surveillance for TB drug-resistance among persons initiating TB treatment and/or HIV drug resistance (HIVDR) surveillance among persons initiating antiretroviral therapy (ART) in the same clinic. In each province, a single primary health clinic was selected based on high TB and HIV case loads. Voluntary enrolment of participants is on-going in 3 clinics, with a fourth clinic starting in Gauteng in the first quarter of 2016. Here, we report on HIVDR data collected thus far.

By the end February 2016, 334 specimens had been collected for HIVDR testing, 70 (21%) from Eastern Cape, 64 (19%) from Mpumalanga and 200 (60%) from North West Province. Seventy-one percent of enrolled participants were female, and median age of all participants is 32 years (IQR 26 - 40 years). The median most recent CD4 count at time of ART initiation was 257 cells/µl (IQR 160 – 389 cells/µl).

Of 326 case report forms with available data, prior exposure to ART (as PMTCT and/or previous ART) was reported in 80 (25%) participants. Fourteen of these (17.5%) reported receiving PMTCT and 47 (58.8%) had previously received standardized combination ART (cART) for clinical management, whilst 19 (23.7%) participants reported receiving both PMTCT and cART.

HIVDR testing was successful in 311 (93.1%) specimens. Non-nucleoside reverse transcriptase inhibitor (NNRTI) class resistance was detected in 18.6% (58/311) of specimens, and dual nucleoside reverse transcriptase inhibitor (N(t)RTI)/NNRTI drug resistance in 2.6% (8/311). When analysed according to prior ART exposure, HIVDR was present in 37.5% (30/80) of participants with any prior ART vs 14.2% (35/246) of those with no reported prior ART (Figure 4).

Our data show that rates of NNRTI resistance are ~15% in patients initiating ART and are higher in patients reinitiating cART. However, this data should be interpreted with caution as the study is at early stages (~20% of estimated specimen collection has been achieved) and analysis is currently based on small sample size.

Source: Centre for HIV and Sexually Transmitted Infections, NICD-NHLS (adrianp@nicd.ac.za)

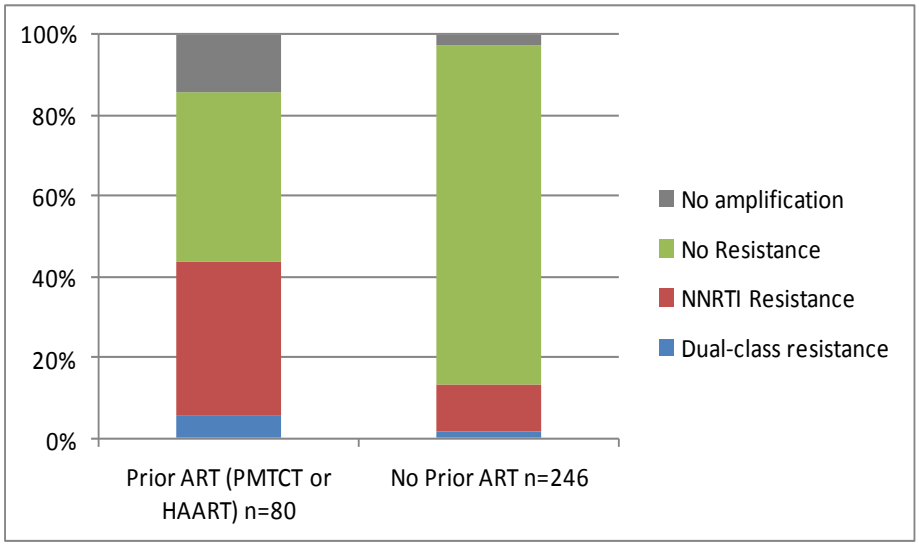

Figure 4.

HIV drug-resistance genotyping outcomes amongst 326 participants enrolled in NICD HIVDR surveillance, according to participants' prior exposure to anti-retroviral therapy