Background: Antiretroviral therapy (ART) has been associated with significant reduction in HIV and AIDS mortality and morbidity as well as incidence. As more patients access antiretroviral therapy (ART), higher proportions of newly infected patients may be infected with drug-resistant viruses. Recent studies show an increase of transmitted drug resistance in East Africa as well as some parts of southern African countries with older public treatment programmes. There is need for close surveillance of transmission of drug resistance in southern Africa where high rates of transmission persist despite rapid expansion of ART.

Methods: The study used samples collected from a population-based HIV surveillance conducted in 2010, 2011 and 2012. The surveillance is conducted in the rural district of uMkhanyakude in northern KwaZulu-Natal, which had an adult (15–49 years) HIV prevalence of 29% in 2011. With a crude HIV incidence of 2.63 per 100 person-years between 2004 and 2011 for all adults >15 years of age, this area has one of the highest incidence rates in South Africa. Antiretroviral therapy is most accessed through a 10-year-old rapidly expanding and evolving public treatment programme.

Results: Data from 701 participants were used. Table 1 shows the distribution of the participants by year and their demographics. The proportion of the participants that had ≥1 SDRM were not significantly different between the participants classified as recently infected and chronically infected (Table 2).

Figure 2: The percentage of participants whose samples had evidence of drug resistance increased between 2010 and 2012. The p-value for the 3rd trend test between 2010 and 2012 showed a statistically significant change in the percentage of participants with any SDRM (p = 0.0246). There were no significant differences between 2010 and 2011 or 2012. The 3rd trend test taking into account all three years had a p value of 0.030.

Conclusion: Our results suggest that levels of transmitted drug resistance are increasing in rural KwaZulu-Natal. With current levels of transmitted drug resistance, the current treatment recommendations are still effective. However, there is need for more vigilance in the surveillance of transmitted drug resistance in order to identify further increases that might impact on the choice of the recommended first-line regimens, this is especially important for a treatment as prevention trial (TasP) at Africa Centre.

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