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Editorial

Long term impact of antiretroviral therapy - Can we end HIV epidemic, the goal beyond 2015

With the advent of antiretroviral therapy and with the production of generic antiretrovirals (ARVs)[1,2], 12.9 million persons with HIV disease are receiving antiretroviral treatment (ART)[3]. Dramatic decline in morbidity and mortality due to HIV disease has been observed both in the developed and developing countries[4,5]. Robust scale-up of ART is happening in India[6] and in other lower and middle income countries (LMIC)[3]. Recent global update has clearly shown the declining death rate across the region among persons who were on ART[3].

The HPTN052 study has shown 96 per cent reduction in sexual HIV transmission and reduction in incidence of tuberculosis following ART[7]. The WHO 2013 ARV guidelines[8] have recommended ART for all serodiscordant couples irrespective of CD4 cell count and for asymptomatics with CD4<500 cells/µl. This guidance will move the eligible numbers who need ART to 25 millions in LMIC. Recent global update has shown reduction in sexual transmission of HIV across the region[3]. When 2013 WHO ARV guidelines are implemented across the regions, greater impact on declining incidence are expected. The major obstacle is identifying individuals with CD4 >350 cells/µl. Data have shown the median CD4 to initiate ARV in low, lower middle and upper middle income countries is less than 200 cells/µl[9]. The mortality rate was higher in the first year after initiation of ART due to the low baseline CD4 cell count[10].

Efforts should be made in each country on the frequency of HIV testing, which should be cultural specific and based on HIV incidence in different key populations. A recent modeling study done for India has shown that voluntary HIV screening among national population every five years and annual screening among high risk population and in high prevalent districts will offer substantial clinical benefit and be cost effective[11]. Similar exercise should be carried out in each country.

Tuberculosis continues to be the major co-factor in HIV disease progression in HIV infected persons[12]. The WHO has recommended isoniazid preventive therapy (IPT) which is being implemented and efforts should be done to make it universal in high endemic regions[8]. The WHO 2013 ARV guidelines recommend to initiate ART for all HIV/TB co-infected patients as soon as possible[8]. This will result in reduction in mortality among this population. The UNAIDS report has shown declining mortality in HIV/TB co-infected patients on ART between 2001-2012[3].

PEARLS/ACTG5175 study carried out in resource-limited settings has shown tenofovir (TDF) containing first line ART is safer and superior as compared to zidovudine (AZT) containing regimen[13]. Also modeling studies have shown tenofovir is cost-effective on a long run as compared to AZT[14]. Implementation of TDF containing first line fixed dose combination (FDC) ART should be given priority. Also creatinine monitoring should be implemented in ART programmes to identify early renal toxicities. Operational research is needed to identify the TDF related adverse effects for the inclusion in the future guidelines.

With the rapid scale-up of ARVs, need for 2nd line ARVs is also on the rise. The absence of viral load monitoring can lead to immunological and clinical failure and also can jeopardize future regimens due to

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the accumulation of resistance mutations[15-18]. Phasing in viral load technology in LMIC is an urgent priority and this needs resources and capacity building. Surveillance of ARV resistance should be carried out periodically in the national programmes to advise the future guidelines to incorporate newer class of first line ARV regimens[19,20].

Adherence to antiretroviral therapy and removing stigma are critical to get the maximum efficacy and the effectiveness of benefits. Local strategies to be developed and implemented to improve adherence. Family members, community and technologies like sending text messages through mobile phones should be used to improve medication adherence. Further, patient friendly care services, counselling and innovative techniques like phone reminders need to be implemented to avoid loss to follow up and to improve retention[21,22].

With the availability of simplified potent ART regimens, persons with HIV live longer. A cohort study conducted in India has shown a significant number of persons on ART living for more than 10 years[23]. The major reason for morbidity in this cohort was due to the non-AIDS complications like diabetes, cardiac, renal, and liver diseases, malignancy and neurocognitive impairement. A study from Brazil has also shown similar results[24].

People living with HIV are now living longer due to the impact of expanded HIV treatment, but they are also facing non-HIV chronic conditions and experiencing high rates of morbidity related to non-communicable diseases (NCDs). With the increase in occurrence of non-communicable diseases in this population receiving long term ART, there is an urgent need to integrate HIV care in health service delivery.

Global progress in scale-up of ART has been extraordinary and a decrease in both morbidity and mortality is seen. Sustainability of ARV programmes will require forward looking policies, more effective and innovative approaches, together with further investments. Efforts should be in place to prevent the transmission of ARV resistant strains of HIV. Viral load monitoring and adherence counselling will assist this. With increasing NCDs in the HIV infected population, programmes should integrate HIV care in health service delivery to prevent and manage NCDs. The ARVs are a powerful tool towards ending the HIV epidemic. HIV might be positioned within the post-2015 development agenda, with a vision of 'ending the AIDS epidemic'.

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