EDITORIAL

Challenges of Antiretroviral Treatment for Human Immunodeficiency Virus Infection in Pakistan

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Pakistan is a nation in the Asia and Pacific region where new HIV infections have been increasing at a worrying pace since 2010. The Asia and Pacific region was home to an estimated 5.8 million people living with HIV (PLHIV) in 2019.[1] Along with some central Asian nations, Bangladesh, Philippines, Pakistan, and Afghanistan are facing rapidly expanding HIV epidemics. Between 2010 and 2018 new infections rose by 75% in Pakistan in these eight years.[1] According to the National AIDS Control Programme (NACP) Pakistan there are an estimated 180,000 PLHIV in the country, of whom only 23,592 (13.1%) were receiving antiretroviral treatment (ART). Among persons on ART, 6,933 (29.3%) are people who inject drugs (PWIDs).[2] UNAIDS in 2018 also reported that only 14% PLHIV in Pakistan were aware of their HIV status and there were 22,000 new infections in the year.[3] This is far short of the 90-90-90 goals for 2020 from UNAIDS and WHO to have 90% of PLHIV know their status, 90% of these linked to ART-based clinical care, and 90% of those in care virally suppressed.

While national prevalence of HIV remains less than one percent (0.1%), the Pakistan HIV epidemic has been in a concentrated phase for at least two decades, with more than 5% prevalence in one or more than one key population (KP). For example, surveys suggested the national HIV prevalence among PWIDs in 2011 to be 37.8% and in 2016-17 was assessed as 38.4%. HIV prevalence in the country among transgender persons (TGs) was documented as 7.2% in 2011 and 7.5% in 2016-17.[4] Programmatic data of Nai Zindagi, a non-governmental organization (NGO) providing harm reduction services to PWIDs in 38 districts of the country indicate that from 2011 through 2019, HIV prevalence had reached 46.1% among PWIDs.[5] Even acknowledging methodological limitations of using programmatic data for surveillance given a chance of duplications, i.e., repeat measures of the same persons, the numbers are worrisome.

In April 2019, an unprecedented community-based HIV outbreak was reported from a small town in rural Sindh province of Pakistan. It affected a large number of people from the general population, mostly children. HIV testing following the confirmation of the outbreak among children in Ratodero led to testing of 31,239 individuals in the area and 930 (3%) were confirmed HIV positive, 763 (82%) of whom were children less than 16 years of age and 604 (79%) five years of age or less.[6] Six months after the Ratodero outbreak, 15 new HIV cases were reported from nine different villages in rural areas surrounding the city of Hyderabad in Sindh province.[7] Given the high rates of infection among children, a nosocomial source of infection was suggested from unsafe reuse of needles and syringes for medical care or vaccination.[8]

With rising new cases of HIV there are serious challenges related to access and adherence to ART therapy. Although NACP has established 45 HIV treatment centres throughout the four provinces of the country with support of Global Fund,[9] PLHIV often travel long distances for care and pay out-of-pocket for travel costs. Given the shortage of infectious disease specialists, ART centers are rarely supervised by specialists. Primary care providers, including physicians, lack experience and proper training, particularly in the management of children living with HIV. The issue of interrupted supply of ARTs also remains a challenge. ARTs are not manufactured in Pakistan and are imported through a Global Fund to Fight AIDS, Tuberculosis and Malaria country support mechanism. There are issues particularly with stock outs in paediatric formulations, also noted in PEPFAR programmes in Africa.[10] HIV drug resistance is an additional serious global health threat that can affect HIV treatment outcomes in low and middle income countries that have fragmented health care systems, access-to-care limits, shortages of second-line ART regimens, and sub-optimal viral monitoring.[11] HIV drug resistance can undermine UNAIDS Fast Track goal of ending AIDS by 2030.[12-14]

The COVID-19 pandemic has adversely affected overall delivery of health care and prevention services globally and Pakistan is no exception. As of 28 September 2020, Pakistan had reported 310,841 confirmed COVID-19 cases and 6,466 deaths.[15] People living with HIV with advanced disease (e.g., not on treatment or not virally suppressed) may be at greater COVID-19 risk.[16,17] Data related to PLHIV with

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COVID-19 or deaths due to coronavirus infection are not available in Pakistan. While implementing a community engagement project in the HIV-affected community in Ratodero where more than 1100 HIV positive children and adults are registered for ART, it has been observed that mortality among children has increased in the last six months and most children have not been tested for COVID-19. (Personal communication with outreach workers of UNICEF and Sindh AIDS Control Programme supported project in Ratodero). It is not known whether COVID-19 has contributed to these adverse outcomes, either directly through viral burden or indirectly through declines in provision of care.

High adherence to ART is imperative in order to achieve consistent viral suppression[18-21] and decreases the chances of opportunistic infections. A meta-analysis of 84 studies estimated that only 62% of HIV patients achieved optimal adherence (>90% of prescribed medications).[22] ART adherence remains a challenge in Pakistan. Most PLHIV in Pakistan who know their HIV status belong to key populations, including PWIDs who are often homeless and lack family support. PWIDs, therefore, face acute challenges in ART adherence. In 2019, the Global Fund commissioned a study in four provinces as well as in Islamabad Capital Territory to determine how well PLHIV adhere to HIV treatment. Treatment data included a 24-month arm with 846 PLHIV receiving treatment from 24 centers and an additional 12-month cohort with 1086 PLHIV registered in 28 treatment centers. In the 12-month cohort, only 26% of PLHIV were retained in care while in the 24-month cohort, only 11% were fully retained. As a proxy for retention, the study looked at the regularity of monthly ART visits by patients in both cohorts i.e. they showed up for every visit to the ART center. Overall viral suppression was 49%. In Pakistan, ART patients are supposed to have an initial viral load (VL) test three months after initiating treatment and then follow-up tests every six months.[23] In 2010, the Association for PLHIV in Pakistan (APLHIV) conducted a study among those PLHIVs receiving ARTs. The study showed a high rate of people accessing HIV treatment (37.6%) were uneducated i.e low number of years of formal education. Respondents also reported disturbing issues about treatment centres failing to maintain their confidentiality, revealing their HIV status without consent.[24]

Considering the prevailing circumstances, we propose the following:

- The number of HIV treatment centres should be increased to enable ART access at a district level in Pakistan;
- All HIV treatment centres should work under training supervision from an infectious disease specialist, and this can be virtual, given telemedicine advances in the COVID-19 era, seeking to improve training of staff on the National Guidelines for ART;(25)
- Expand genotyping for HIV drug resistance (molecular surveillance) to help health care providers to select appropriate ART regimens;
- Improved counselling of clients regarding ART, including community home-based care of people living with HIV; and
- Improved professionalism in HIV treatment centers at every level to protect confidentiality and human rights of PLHIV and their families.

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