



Transmitted HIV drug resistance-does the problem exists inNepal ?

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Dear Editor,

HIV drug resistance can negatively impact on antiretroviral programs in resource limited countries; as it can lead to failure of Anti-retroviral therapy (ART). Transmitted HIV drug resistance reflects the acquisition of drug resistant strain of HIV by a newly infected person, whereas secondary resistance is the emerged resistance due to selective pressure of drugs during the course of HIV treatment. With the use of currently available drugs, the emergence of HIV drug resistance is inevitable due to the selection pressure.¹ Once the transmission of such virus is established, it will add further complexities in treatment and prevention. Understanding the epidemiology of drug resistance is crucial as it guides us to design, test and implement better strategies, both for treatment and prevention of transmission of drug resistant viruses. There has not been any research in Nepal for understanding the problem of HIV drug resistance; but it is essential to explore as early as possible.

Nepal has introduced ART since 2004 and scale up of therapy is the priority. The world health organization (WHO) has recommended countries to conduct HIV drug resistance threshold survey to inform the ART scale up program. The access to the ART service is gradually increasing in the country. According to the data from National Centre for AIDS and STD control (NCASC), currently about 5000 people living with HIV/AIDS (PLHAs) are receiving ART service throughout the country. However, there is scarcity of data about the effectiveness of treatment and there is no data either on transmitted or secondary resistance. A news mentioning hundreds of PLHAs stopping antiretroviral treatment in Nepal was on press at the end of 2010.² There are financial, cultural and many other barriers among Nepalese PLHAs that can negatively impact the adherence which can lead to the selection of drug resistant forms of HIV.

A recent molecular epidemiological study on surveillance of transmitted drug resistance mutations from our neighbouring country India, reported a 9.6% prevalence of drug resistance among PLHAs who denied prior exposure to antiretroviral drugs.³ A study from Nepal has reported that the HIV epidemic among IDUs in Kathmandu is exclusively caused by the subtype C of HIV 1 genetically similar to Indian isolates, thus providing the molecular evidence of linkage with HIV epidemic in India.⁴ It has been known that many of the Nepalese labour migrants acquire HIV in Indian cities like Mumbai, and then transmit the virus to their spouse, partners or sex workers in Nepal. Many of Nepalese labour migrants in Indian cities including Mumbai who are exposed to unsafe sex; are at high risk on acquiring drug resistance forms of HIV. Another recent study has reported the presence of circulating recombinant form of HIV 1 in Nepal.⁵ So it is urgent to monitor for HIV drug resistance in the context of evolving epidemiology.

Establishing and sustaining a HIV drug resistance testing laboratories costs considerable physical infrastructure, technical and financial resources. In order to assist the resource limited countries, WHO has developed the HIV drug resistance threshold survey method, which can use dried blood samples (DBS) for surveillance of transmitted HIV drug resistance. Such survey should be conducted in geographical areas of country where large numbers of eligible patients are taking ARV for more than 3 years.⁶ WHO has published clear guidelines for selection of eligible individuals and appropriate study sites. In addition, WHO recommends genotyping of remnant

specimen collected for the routine purpose without violating the ethics. The use of DBS samples has made the HIV drug resistance surveillance feasible from any part of the world. Such DBS can be sent via air mail to national, regional or specialized drug resistance laboratories. In Nepal, Kathmandu valley can be such a geographical area, where ART has been available here from last 7 years and it is likely that people living with HIV in this area have higher access to the treatment.

So, the countries like Nepal which do not have their own drug resistance testing facility, can collect eligible DBS and easily transport them to regional or specialized WHO accredited HIV drug resistance laboratories anywhere in the world. In context of Nepal, National Centre for AIDS and STD Control (NCASC) and national public health laboratory (NPHL) should take a leadership to establish collaboration with regional or specialized laboratories and initiate a program to timely monitor the problem of HIV drug resistance.

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