

Short Communication

*Corresponding author

Usman Waheed

PhD Fellow

Department of Pathology
Shaheed Zulfiqar Ali Bhutto Medical
University

Islamabad, Pakistan

Tel. +92333-5638702

E-mail: usman.waheed07@gmail.com

Volume 2 : Issue 4

Article Ref. #: 1000HARTOJ2118

Article History:

Received: December 31st, 2015

Accepted: February 16th, 2016

Published: February 18th, 2016

Citation

Waheed U, Azmat M, Arshad M, Arshad A, Zaheer HA. HIV/AIDS Epidemic and Global Health. *HIV/AIDS Res Treat Open J.* 2016; 2(4): 105-107. doi: [10.17140/HARTOJ-2-118](https://doi.org/10.17140/HARTOJ-2-118)

Copyright

©2016 Waheed U. This is an open access article distributed under the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

HIV/AIDS Epidemic and Global Health

Usman Waheed^{1*}; Muneeba Azmat²; Muhammad Arshad³; Abida Arshad⁴; Hasan Abbas Zaheer¹

¹Department of Pathology, Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad, Pakistan

²Department of General Medicine, Pakistan Institute of Medical Sciences, Islamabad, Pakistan

³Department of Biotechnology, International Islamic University, Islamabad, Pakistan

⁴Department of Biology, PMAS-Arid Agriculture University, Rawalpindi, Pakistan

AIDS has emerged as a global epidemic in an unprecedented universal involvement compelling the transformation of the general outlook towards disease and the emergence of the concept of global health. First cases of AIDS were reported in 1981¹ and the causative agent (HIV) was recognized in 1983 by Luc Montagnier.² Different names were given to the disease initially such as lymphadenopathy, Kaposi's sarcoma and opportunistic infections, Gay-related immune deficiency and the 4H disease, but ultimately the name AIDS was coined in July 1982. The HIV attacks the body's immune system decreasing the helper T-lymphocyte counts and leaving individuals susceptible to opportunistic infections and tumors.

More than 34 million people have died of AIDS since 1981 which includes 1.2 million only in 2014.³ An estimated 36.9 million people are living with HIV in 2015 (including 2.6 million children), up from 29.8 million in 2001.⁴ Of 36.9 million infected individuals, 19 million are unaware of their HIV-positive status unfortunately.³ Around 5,600 people contract HIV every day, which makes 4 people being infected every minute and 230 people per hour.⁵ In the year 2013, 1.5 million people died due to AIDS out of which 220,000 were children under 15 years.⁶ (Table 1)

Ninety percent of the HIV positive children are based in Sub Saharan Africa⁸ and globally, most of children (90%) get the infection through vertical transmission from their mothers during pre and postpartum.⁹ Awareness to prevent the vertical transmission from mother to child is important for better quality of life in children of HIV mothers.

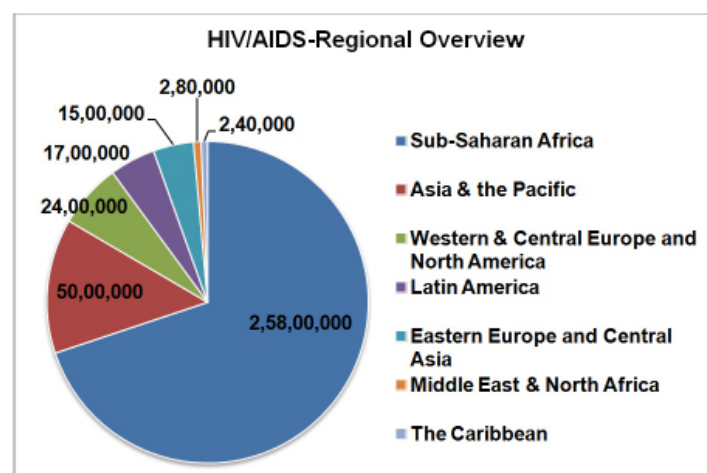


Figure 1: Chart showing number of people living with HIV in different regions of the world.⁶

	2005	2006	2007	2008	2009	2010	2011	2012	2014
People living with HIV	32.2 million	32.8 million	33.2 million	33.5 million	34.0 million	34.4 million	34.9 million	35.3 million	36.9 million
New HIV infections (Total)	2.9 million	2.8 million	2.7 million	2.6 million	2.6 million	2.5 million	2.5 million	2.3 million	2.0 million
New HIV infections (Adults)	2.3 million	2.3 million	2.2 million	2.2 million	2.2 million	2.2 million	2.2 million	2.0 million	1.8 million
New HIV infections (Children)	540,000	520,000	480,000	450,000	400,000	360,000	310,000	260,000	150,000
AIDS-related deaths	2.3 million	2.3 million	2.2 million	2.1 million	2.0 million	1.9 million	1.8 million	1.6 million	1.2 million

Table 1: HIV/AIDS statistics 2005-2014.^{6,7}

Reasons for inadequate action against AIDS include insufficient funding along with mixed and unregulated infrastructure in developing countries. People living with HIV are also subjected to stigma and are sidelined from becoming productive individuals of a society. Thus the people living with HIV are reluctant to renounce the safety of the status “Healthy” which not only leads to delay in getting treatment but also reduces the long term adherence to the HIV treatment. Along with these difficulties, mobilizing resources and emphasizing sustainability by political commitment and smart investments have established a favorable course over the past decade with decrease in new HIV infections.³ Recent statistics show a reduction in new HIV infections by 35% in general population along with a decline in infections among children by 58% since 2000 whereas AIDS-related deaths have also been reduced by 42% since the peak in 2004.⁶

The HIV management needs a holistic approach of prevention, treatment and follow-up of the HIV-infected individuals. The prevention includes male circumcision, post and pre exposure of prophylaxis, injection safety, safe blood transfusion and safe sexual practices. The treatment modality is Antiretroviral Therapy (ARV) or combination of drugs Highly Active Antiretroviral Therapy (HAART). These therapies result in the reduction of the HIV viral load in the blood and other bodily fluids to an undetectable level, thus minimizing the risk of HIV transmission from one individual to the other. There are more than 25 HIV medicines which are approved to treat HIV infections alone or in combination. These drugs are further grouped into six categories according to their mode of action such as Non-nucleoside reverse transcriptase inhibitors (NNRTIs) and Nucleoside reverse transcriptase inhibitors (NRTIs) that inhibit the conversion of HIV RNA into DNA thus blocking the replication cycle of HIV.¹⁰ Vitamins especially Vitamin A and mineral supplementation such as Selenium have also been used as an adjuvant to the standard treatment with variable results in quality of life and virtually no effect on the prognosis. The greatest challenge in fighting the AIDS epidemic is loss to follow up due to non-compliance to therapy.

Apart from treating adults and children, the vertical transmission of disease from mother to child is also kept in check through the Prevention of mother-to-child transmission (PMTCT) services. Mothers are given ARV’s during pregnancy to eliminate the risk of transmission. The ARV’s have various

classes of drugs which target diverse stages in the life cycle of HIV virus thus keeping the viral replication in check and preventing disease progression. Without the ARV treatment, the transmission rate of HIV from mothers to their babies during pregnancy and delivery is around 15-30%.¹¹ A further 5-20% become infected through breastfeeding.¹² The PMTCT services have scaled up and the proportion of women visiting PMTCT has increased from 33% to 68%.¹³ Women who are HIV positive should be encouraged to give birth at a clinic. The services should further be scaled up so that all pregnant women across the developing world must be tested for HIV. Under the WHO guidelines on PMTCT, all HIV positive mothers identified during pregnancy, should receive a course of antiretroviral drugs to prevent mother to child transmission.¹⁴ The successful implementation of PMTCT programme relies on public support and mobilization that can be achieved by investing energies for awareness and petitioning with potential benefactors, services providers, policy makers and general public.

It is very important that HIV infected individuals are tested at the earliest to initiate the treatment regime. The testing for HIV antibodies has been performed since 1985 and is useful in rapid field testing, the reason being their feasibility in terms of ease to perform and economically affordable infrastructure that obviates the need to process and store specimens and transport them from the field. Unprecedented numbers of kits are available for testing HIV antibodies. The antibody test has significantly lesser yield in children who are then tested with PCR since the antibody tests yield insignificant results in the first 18 months of life.

Initial rampage by HIV was cut short by the collective front against the AIDS by establishing fight against the disease. In 1993, the World Development Report devised a 3 pronged approach to develop government policies and endorsed the increase in prevention activities for HIV/AIDS activities by a factor of 10⁻¹⁵.¹⁵ By the late 1990’s, access to antiretroviral therapy in the high income countries turned the tables on AIDS mortality, this was closely followed by introduction of ART in developing and low income countries. Around 41% of the total individuals affected by HIV are now covered under ART that includes an estimated 200,000 children. Approximately, 12.9 million patients had access to antiretroviral therapy in 2013.³

The progress made in the Fight against AIDS is enormous; however, for achieving the goal of eradication of HIV as an epidemic by the year 2030, the efforts will have to be scaled up. The prevention of HIV infection in communities is possible through greater access to the drugs that can treat the individuals and prevent mother to child transmission with appropriate testing and support for the families. Drug availability along with development of the current infrastructure with extensive capacity building and improved management is required to eliminate the epidemic of AIDS.

UN members in 2015 have endorsed a bold agenda in development debate constructed around 17 Sustainable Development Goals (SDGs) with a dynamic shift to public oriented approaches.¹⁶ Moreover, the next five years have been marked as crucial in scaling up the AIDS response. This up scaling will not only pave ways to eradicate a public health problem by the year 2030, but would also generate benefits of US\$1157 billion.¹⁶

The scaling up of AIDS response includes stress on HIV prevention, and expanding access to treatment, increasing transparency and policy development based on better data with robust accountability, upholding human rights especially women, and finding new ways to address the criminalization, stigma, and discrimination against AIDS effected individuals. Increased efforts for research and development in fighting AIDS, global access to HIV treatment and safeguarding the right to health are key elements in the prevention of HIV epidemic.

CONFLICTS OF INTEREST: None.

REFERENCES

- Centers for Disease Control (CDC). Pneumocystis pneumonia – Los Angeles. *MMWR Morb Mortal Wkly Rep*. June 5, 1981; 30(21): 1-3.
- Papadopoulos-Eleopoulos E, Turner VF, Papadimitriou J, et al. A critique of the Montagnier evidence for the HIV/AIDS hypothesis. *Med Hypotheses*. 2004; 63(4):597-601. doi: [10.1016/j.mehy.2004.03.025](https://doi.org/10.1016/j.mehy.2004.03.025)
- UNAIDS. The Gap Report 2014. Joint United Nations Programme on HIV/AIDS, Geneva. http://www.unaids.org/sites/default/files/media_asset/UNAIDS_Gap_report_en.pdf. Accessed December 3, 2015.
- World Health Organization. 10 facts on HIV/AIDS. <http://www.who.int/features/factfiles/hiv/en/>. Accessed November 25, 2015.
- amfAR, The Foundation for AIDS Research. Statistics: Worldwide. <http://www.amfar.org/worldwide-aids-stats/>. Accessed December 3, 2015.
- World Health Organization. Global Health Observatory (GHO) data: Number of deaths due to HIV/AIDS. http://www.who.int/gho/hiv/epidemic_status/deaths/en/. Accessed December 3, 2015.
- The Joint United Nations Programme on HIV/AIDS (UNAIDS). 2013 Global Fact Sheet. <http://www.unaids.org/en/resources/campaigns/globalreport2013/factsheet/>. Accessed February 15, 2016.
- WHO. PMTCT Strategic Vision 2010-2015: Preventing mother-to-child transmission of HIV to reach the UNGASS and Millenium Development Goals. http://apps.who.int/iris/bitstream/10665/44268/1/9789241599030_eng.pdf. Accessed February 15, 2016.
- IATT on Prevention of HIV Transmission in Pregnant Women, Mothers and their Children. Guidance on global scale-up of the prevention of mother to child transmission of HIV: towards universal access for women, infants and young children and eliminating HIV and AIDS among children. http://www.unicef.org/aids/files/PMTCT_enWEBNov26.pdf. Accessed February 15, 2016.
- Overview of HIV treatments. 2015. <https://www.aids.gov/hiv-aids-basics/just-diagnosed-with-hiv-aids/treatment-options/overview-of-hiv-treatments/>. Accessed February 15, 2016.
- Singhal P, Naswa S, Marfatia YS. Pregnancy and sexually transmitted viral infections. *Indian J Sex Transm Dis*. 2009; 30(2): 71-78. doi: [10.4103/0253-7184.62761](https://doi.org/10.4103/0253-7184.62761)
- WHO and UNAIDS. HIV in Pregnancy; A Review. http://www.unaids.org/sites/default/files/media_asset/jc151-hiv-in-pregnancy_en_1.pdf. Accessed December 3, 2015.
- Joint United Nations Programme on HIV/AIDS (UNAIDS). 2014 progress report on the Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive. http://www.unaids.org/sites/default/files/documents/JC2681_2014-Global-Plan-progress_en.pdf. Accessed December 3, 2015.
- World Health Organization. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection, 2013. http://apps.who.int/iris/bitstream/10665/85321/1/9789241505727_eng.pdf. Accessed December 3, 2015.
- Jamison DT, Summers LH, Alleyne G, et al. Global health 2035: a world converging within a generation. *Lancet*. 2013; 382(9908):1898-1955.
- Sidibe M. The sustainable development agenda and the end of AIDS. *Lancet*. 2015; 386(9989): 108-110. doi: [10.1016/S0140-6736\(15\)61041-8](https://doi.org/10.1016/S0140-6736(15)61041-8)