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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/15978

DOI URL: <http://dx.doi.org/10.21474/IJAR01/15978>



RESEARCH ARTICLE

ELIMINATION OF MTCT OF HIV IN INDIA BY 2030: CURRENT STATUS AND THE WAY AHEAD

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Manuscript Info

Manuscript History

Received: 31 October 2022

Final Accepted: 30 November 2022

Published: December 2022

Key words:-

Mother to Child Transmission, HIV, Elimination of HIV, PMTCT, Antiretroviral Therapy, Strengthening of Health System

Abstract

Background: Considering the global public health priority of eliminating Mother-to-child transmission (MTCT) of HIV, World Health Organization (WHO) started the initiative of Global Plan Towards Eliminating New HIV Infections Among Children by 2015 and Keeping Their Mothers Alive. Owing to those efforts, the number of children aged between 0-14 years acquiring HIV has decreased since 2011, but not rapidly enough. India is one among the 23 focus countries and while Cuba, Maldives, Thailand and recently Sri Lanka have successfully eliminated MTCT of HIV, India is lagging behind in this ambitious goal despite sustained efforts.

Methods: A systematic review of recent literature on MTCT of HIV, current global and Indian status regarding MTCT and the successful approach and methods of countries which were certified by WHO as to have eliminated MTCT of HIV was performed and analysed.

Results: As MTCT of HIV has three distinct points – during pregnancy, during delivery and during breastfeeding, the approaches to prevent MTCT also focus on these points chiefly. However, educating the adolescent girl and women of child bearing age would serve as the primordial prevention which also enormously reduces the burden among the three points mentioned above. Awareness also pave a way for volunteering in testing for HIV before planning for pregnancy and regularly checking if the mother found to be HIV positive, keeping the viral load under the desired level in addition to adherence to ART wherever necessary.

Discussion: Focusing in all areas where there is possibility of MTCT, Promoting antiretroviral therapy adherence to mothers and children, Involving community level workers, Improved case detection and Strengthening of health system are the measures to be followed in order to achieve elimination of MTCT of HIV in India

Conclusion: In the developing countries like India early diagnosis, awareness and the community participation and in collaboration with NGOs can help to achieve the target of elimination of MTCT of HIV.

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Introduction:-

Human immunodeficiency virus (HIV) is an infection that attacks the immune system of the body, specifically the white blood cells known as CD4 cells. HIV destroys these CD4 cells, weakening a person's immunity which can lead to infections like tuberculosis and even certain cancers.

If the person's CD4 cell count falls below 200, their immunity is severely compromised, leaving them more susceptible to infections. Someone with a CD4 count below 200 is described as having AIDS (Acquired Immuno Deficiency Syndrome)(1).

In 2018, an estimated 37.9 million people (including 1.7 million children) were living with HIV, with a global HIV prevalence of 0.8 per cent among adults. About 21 per cent of these same people do not know they are infected with the virus(2).

Since the start of the epidemic, an estimated 74.9 million people have become infected with HIV and 32 million people have died of AIDS-related illnesses. In 2018, 770,000 people died of AIDS-related illnesses. This number has reduced by more than 55% since the peak of 1.7 million in 2004 and 1.4 million in 2010.(3)

India faces the world's third largest HIV outbreak. In 2017, the prevalence of HIV among adults (15-49 years old) was estimated at 0.2%.

Methods:-

A systematic review of recent literature on Mother to Child Transmission(MTCT) of HIV, current global and Indian status regarding MTCT and the successful approach and methods of countries which were certified by WHO as to have eliminated MTCT of HIV was performed and analysed. Data pertaining the major challenges facing in preventing the MTCT in India and current recommendations were accessed from the official websites of the NACO, UNAIDS, UNICEF etc..

Mother-To- Child Transmission of HIV(MTCT):

Transmission of HIV from a HIV-positive mother to her child is called mother-to-child transmission. This transmission could occur during breast feeding, pregnancy or delivery.

Over 2 million children are thought to be living with HIV/AIDS worldwide, of whom over 80% live in sub-Saharan Africa. Without anti-retroviral treatment, the risk of HIV transmission from infected mothers to their children is 15–30% during gestation or labour, and 15–20% during breast feeding(4).

Due to absence of intervention among pregnant mothers, the transmission rate of this virus ranges from 15 to 45%. This transmission rate can be reduced to below 5% by proper intervention methods during the time of pregnancy, delivery and breast feeding. Such interventions include mainly anti-retroviral therapy for the mother and a short course of antiretroviral drugs for the child. It also include measures to prevent HIV acquisition in the pregnant woman and appropriate breastfeeding practices(5).

Current Status of MTCT of HIV in India:

India has estimated 145,000 children <15 years of age who are infected by HIV/AIDS, and about 22,000 new infections occur every year. Children account for 7% of all the new HIV infections(6).

More than 90% of the HIV infections in children are the result of MTCT. The rate of MTCT of HIV ranges from 20% to 45% in the developing world. It ranges from 15% to 30% in non-breast feeding populations whereas it is 30%–45% in countries where breastfeeding is a norm(6).

In India, although the total prevalence of HIV among clinic attendants in antenatal care (ANC) appears to be at a low level of 0.35%, there is an increasing trend of infection among monogamous pregnant women. Paediatric HIV is thus likely to become another major public health problem.

Countries which have Eliminated MTCT of HIV and their Strategies:

CUBA:

On 30th June 2015, Cuba has become the world's first country to receive certification from the WHO that it has eliminated MTCT of HIV.

Cuba has focused in all the points where MTCT can happen viz., early access to prenatal care, HIV testing for both pregnant women and their partners, treatment for women who test positive and their babies, caesarean deliveries and

substitution of breastfeeding. These services are provided as part of an equitable, accessible and universal health system in which maternal and child health programs are integrated with programs for HIV and sexually transmitted infections(7).

Thailand:

On 8th June 2016, Thailand became the first country in Asia to validate the elimination of MTCT by meeting World Health Organization goals. Since Thailand is experience in implementing MTCT system effectively it could be instructive for other countries.

The Thai government launched national HIV education and 100% condom use campaigns, implement pilot prevention of MTCT activities, gather evidence to develop national policy, and expand activities nationwide. The government also engaged with civil society, persons living with HIV, and nongovernmental organizations to consider appropriate and feasible prevention interventions(8) .

Thailand has a robust national prevention of MTCT monitoring and evaluation system that promotes data use for program improvement at national and subnational levels. As a result, the expanding epidemic of HIV among women was stemmed and MTCT reduced, and fewer infants are born HIV-positive in Thailand(8).

Malaysia:

On 8th October 2018, Malaysia has certified by WHO as it has eliminated the mother to child transmission of HIV. It is the first country to achieve the milestone in West Pacific region of WHO.

In Malaysia the Antenatal monitoring and medication for HIV is provided free of charge, and nearly all women have access to quality health services including abortion and deliveries aided by trained caregivers. As a result, the number of babies born with HIV or syphilis has reduced to the level compatible with global elimination criteria(9).

The Malaysian Government states that Achieving the Elimination is not the end of our battle and to ensure that every Malaysian child starts a safe, HIV-free and syphilis-free life. It is the beginning of an everlasting quest to provide exceptional quality care in order to prevent all diseases that are transmitted from mother to child.

Maldives:

On 15th July 2019, Maldives has validated by WHO for eliminating mother to child transmission of HIV. By eliminating mother to child HIV and Syphilis, Maldives once again leads with its exemplary record in controlling and eliminating diseases in South East Asia(10).

A unique feature of the Maldives AIDS policy has been the full incorporation of all health services and preventive services into the general health system, as all health facilities, at all levels which continue to offer resources that are essential to HIV prevention and control.

Maintaining this status is equally important and requires on going, wide-ranging program efforts to prevent new infections in infants, children and adults, which the Maldives has in place.

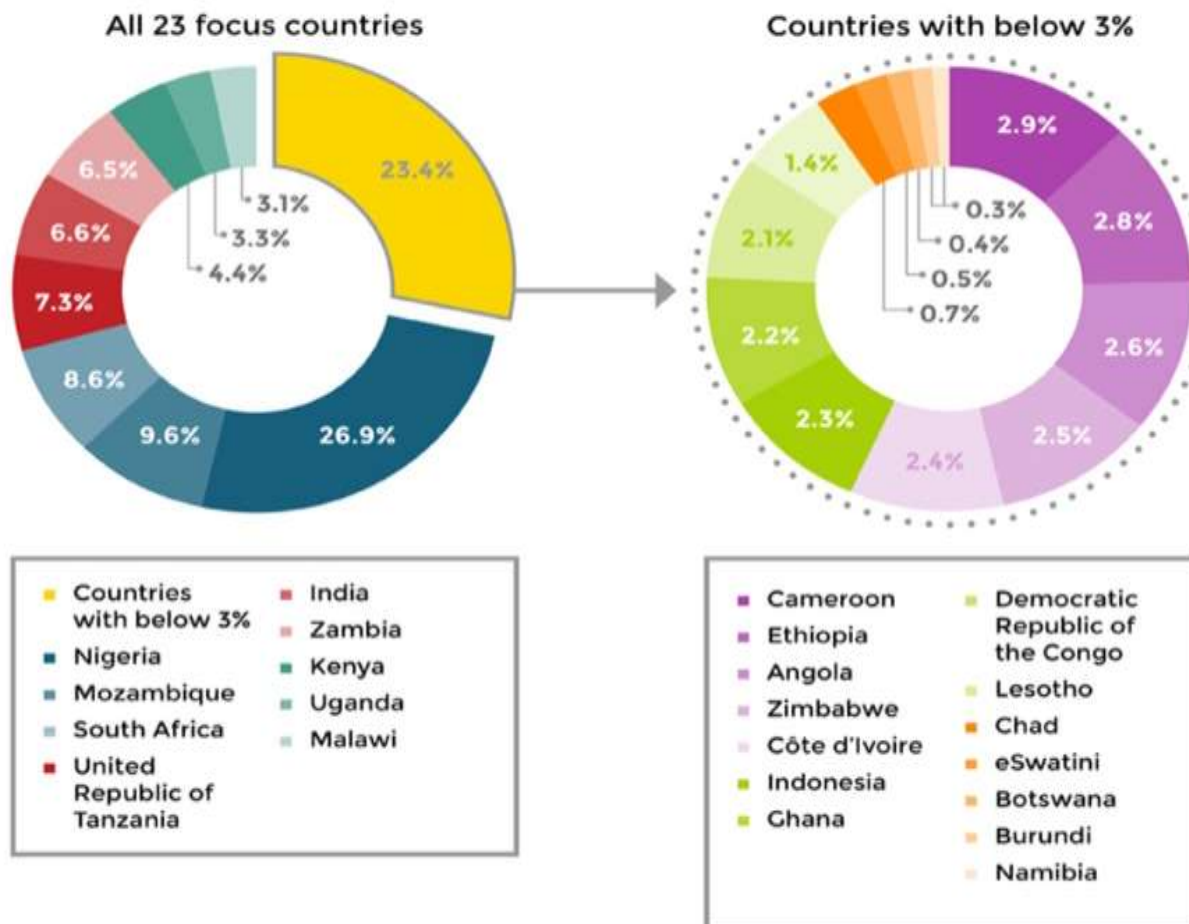
Sri Lanka:

On 30th November 2019, World Health Organization has certified Sri Lanka as a country that has eliminated transmission of HIV from mother to child and Sri Lanka is the third country in the Asia-Pacific region that was certified to have eliminated the MTCT.

Sri Lanka's health services have eliminated the spread of HIV from mother to child within the last five years. Their challenge in 2020 is to find 90% of HIV positive people in 2020 and treat them and that will helps to reach their ultimate goal by eradicating AIDS by 2025. National HIV prevalence remains relatively low in Sri Lanka and the country provides free access to HIV treatment for all eligible people(11)

Figure 1:- Distribution of Children infected through MTCT of HIV in Various Countries:

Distribution of children infected through mother-to-child transmission, 23 focus countries, 2016



Source: UNAIDS 2017 Estimate

Major Challenges Facing in Preventing the MTCT of HIV in India:

At Individual Level:

1. Lack of awareness about prevention of parent-to-child transmission services

The awareness levels are shown to be as low as 37.6% among antenatal women attending a tertiary hospital and 48% among those attending a rural antenatal clinic in South India (12). This low awareness about MTCT contributes higher rates of HIV transmission.

2. Utilization of antiretroviral therapy services

An analysis of routinely collected program data showed that as many as 63% of patients receiving ART were living outside the treatment district (13). Women quoted several reasons for not attending the ART centres because of non-availability of child care sickness financial issues distance and no means of transportation.

3. Maternal Antiretroviral therapy

Adherence to ART/ARV by the mother is crucial for the successful prevention of mother-to-child transmission of HIV. The treatment is considered to be successful if adherence is more than 95%. Poor adherence results in emergence of drug-resistant viral strains. The proportion of mothers who have reported good adherence rates is

fairly low, reported to be 39% and 56.4% from different studies. Non-adherence is shown to be associated with side effects, illiteracy, burden to taking too many medications, and depression (14).

4. Antiretroviral adherence among children

It is currently recommended that all HIV-infected children <2 years of age should receive ART, while in older children, the indications are based on clinical and/or immunological criteria (15). Factors which have been shown to affect adherence among children include side effects such as palatability, dosage, policy, limited access, transport costs, and travel time etc.

At Social Level:

1. Maternal nondisclosure of HIV status

Women are afraid to report their HIV status which could lead to stigma and social ostracism. Stigma acts as a barrier to receiving Prevention of Parent To Child Transmission (PPTCT) services because it interferes with HIV treatment and testing. Many mothers tend to hide their HIV status at the time of delivery for fear of discrimination, violence and lack of services.

2. Disclosure of HIV diagnosis to children

The proportion of children who are not aware of their HIV status is fairly high, in different study settings. For fear of stigma discrimination and mental trauma, most parents and care givers feel compelled not to reveal their child's HIV status.

At Programatic Level:

1. Quality of Health care

Stigma among health-care providers toward HIV-positive pregnant women poses as a challenge in accessing (PTCT) services. In Tamil Nadu, majority of the HIV-infected mothers have been victims of ill behaviour from the health staff (16).

2. Lack of intra natal monitoring for HIV infection

Lack of intra natal monitoring for HIV infection Majority of women without previous HIV tests found in the workforce are not tested for HIV infection. However, fear of ill-treatment by health-care workers ensures that many HIV-infected women do not report their HIV status.

3. Loss To Follow up

The mothers and their children's loss to follow-up (LTF) threatens the future success of the Prevention of Parent To Child Transmission (PPTCT) programme. Even though PPTCT programs report reduced rates of infection among infants tested at 2 months of age, there is limited priority on retention of HIV-exposed infants in care (16).

Prevention of Mother-To-Child Transmission of HIV(PMTCT)

History:

The prevention of mother-to-child transmission of HIV programme was launched in 2002. PMTCT programmes provide a range of services to women and infants. These include preventing HIV infections among women of reproductive age (15–49 years) preventing unwanted pregnancies among women living with HIV, and providing women living with HIV with the provision of lifelong ART to maintain their health and prevent transmission during pregnancy, labour and breastfeeding (17).

Achievement of PMTCT of HIV:

Around 1.4 million HIV infections among children were prevented between 2010 and 2018 due to the implementation of PMTCT services. In 2017, 80% of pregnant women living with HIV were receiving ART, a significant increase from 2010 levels when only 51% had access.

Despite this significant progress, 740,000 women of reproductive age became HIV positive in 2016. Around 73% of these women live in just 23 countries, the vast majority of which are in sub-Saharan Africa, and are classified as high-priority for PMTCT by UNAIDS (18).

In 2017, just over half (52%) of the 1.8 million children living with HIV were receiving ART. Among those without access to effective treatment, 110,000 died due to AIDS-related illnesses.

In 2017, roughly half the 180,000 children newly infected with HIV were infected during breastfeeding. There are particular challenges in maintaining women living with HIV in care and on effective ART throughout the breastfeeding period, as well as reducing, detecting and managing new infections occurring among women while they are pregnant or breastfeeding. As a result, in some countries more infant infections are now occurring during the postnatal period rather than pregnancy or labour (19).

Results:-

As MTCT of HIV has three distinct points – during pregnancy, during delivery and during breastfeeding, the approaches to prevent MTCT also focus on these points chiefly. However, educating the adolescent girl and women of child bearing age would serve as the primordial prevention which also enormously reduces the burden among the three points mentioned above. Awareness also pave a way for volunteering in testing for HIV before planning for pregnancy and regularly checking if the mother found to be HIV positive, keeping the viral load under the desired level in addition to adherence to ART wherever necessary.

Discussion:-

India's Future Plan towards HIV Free Generation:

Universal screening of HIV among pregnant women is now a policy being implemented by the Government of India. To fast track this elimination of mother-to-child transmission of HIV by 2020, The National Health Mission (NHM) and the National AIDS Control Organisation (NACO) to work together with the all States of the Union to execute the Universal Screening of Pregnant Women for HIV (20).

The plan calls for an accurate and timely reporting of data using available sources and a strong coordination mechanism between the State AIDS Control Societies (SACS) and the National Health Mission (NHM) and for joint monthly monitoring teams to be established to review progress in different States towards the elimination of MTCT of HIV by 2020 (20).

1. Focus in all the areas where there is a possibility of MTCT

- Early access to prenatal care.
- HIV testing for both pregnant women and their partners.
- Treatment for women who test positive and their babies.
- Caesarean deliveries.
- Substitution of breast feeding.

2. Promoting antiretroviral therapy adherence in mothers and children

- Parental and caregiver counselling.
- Promote counselling, emotional support, and skill building for mothers living with HIV/AIDS.
- Disclosure of HIV should be performed as planned intervention rather than abrupt process.
- Timely, sensitive, and well-managed disclosure will significantly improve ART adherence.

3. Involving community level workers:

The “Asha-Life intervention” has shown a significant effect in improving ART adherence and decreasing barriers among rural women living with AIDS in India (21).

4. Improved case detection

- Scaling up of infant diagnostic services and strengthening programs to retain HIV-exposed children in care and ensure timely testing for HIV infection
- Exploring feasibility for viro logical testing at birth: About 30%–40% of HIV-infected infants can be identified by 48 h of age (22).
- Factors such as the institutional delivery rate, time taken to deliver the test report, and dosing data need to be taken into account.
- Ensure continued follow-up of exposed babies for their full participation in postnatal care
- Promote intra natal testing for HIV for patients with no prior record of HIV testing.

5. Strengthening of Health system

- Integrating Prevention of Parent To Child Transmission (PPTCT) programme across private sector by means of promoting public-private partnership.
- Ensure retention of HIV-infected women in the health-care system and transmitting them from PPTCT program to long-term HIV care.
- Strengthen mechanism for Integrating HIV-screening program at primary health care.
- Repeated testing for women infected with HIV during pregnancy
- Strengthen the provision of comprehensive family planning services to HIV-infected women.
- Complete engagement of civil society, with persons living with HIV and non-governmental organization.

Conclusion:-

India is a developing country, the major challenges facing in preventing the Mother To Child Transmission(MTCT) of HIV in India may be addressed by adopting innovative and effective strategies and reinforcing the existing health systems. Early diagnosis, awareness, community participation and in collaboration with NGOs would bring about a significant reduction in HIV incidence, which improve the outcomes among the mother and children who are HIV infected and this will help to achieve the target of elimination of MTCT of HIV in India by 2030.

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