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Editorial

Preventing Mother To Child Transmission of HIV – Current strategies

Prevention of parent-to-child transmission (PPTCT) component of the National AIDS Control Programme includes prevention of development of HIV infection in a child from an infected mother during pregnancy, parturition or breast feeding. Despite advancement in the anti-retroviral therapy, management of paediatric HIV infections remains a major challenge even today, particularly in the developing countries due to multitude of reasons. Though the incidence of paediatric HIV has come down, but unless treated successfully, more than half of these children are likely to succumb to the infection before celebrating their 2nd birthday.¹

According to the data contained in the latest guidelines issued by the National AIDS Control Organisation (NACO), Ministry of Health and Family Welfare, Government of India, there are about more than 2 million people living with HIV in India, out of which women and children under 15 years constitute 39% and 7% of total infections respectively.² Significantly, 0.1 million HIV infected children have been registered for anti-retroviral therapy as of March 2013. Another positive development in this direction is the increased coverage from 0.8 million (in 2004) to 8.83 million (in 2013) in the number of pregnant women who are tested annually for HIV infection.

In 1994, Pediatric AIDS Clinical Trial Group (ACTG 076) demonstrated that Zidovudine given ante-partum to the infected mother and to the newborn infant significantly reduced the risk of perinatal transmission of HIV.³ However, Zidovudine usage was limited due to restricted availability and high cost particularly in the developing countries. A number of placebo controlled trials were conducted in many developing countries in the search of a regimen that was equally effective but cheaper, many of whom came under profound criticism from the ethicists.⁴ HIVNET 012 randomised trial demonstrated that single dose Nevirapine (SD-NVP) decreased the risk of parent-to-child transmission (PTCT) of HIV-1 by 47%, when compared with a short course of zidovudine.⁵ Because of its simplicity, efficacy and economic feasibility, SD-NVP was adopted in many countries for prevention of MTCT (including NACO and Indian Armed Forces in early 2000's). The regimen does not cover the risk of HIV transmission during the antenatal or breast feeding periods and adds to the risk of acquiring drug resistance to NVP as well as cross resistance to Efavirenz. Evidence existed even at that time that perinatal transmission was reduced from 20% to

1.2% in those receiving highly active anti-retroviral therapy (HAART) in the antenatal period, however the high cost restricted its usage to developed nations.⁶

The study by Arora et al published in this issue of the journal reflects the results of using SD-NVP.⁷ The authors looked at the improvement in viral load with SD-NVP and perinatal transmission. Though the plasma viral load did decrease by 50–70%, of the 33 women who received SD-NVP, 3 of the children turned HIV positive at follow up, a 10% rate that is unacceptable by today's standards. However, it needs to be mentioned that, the study was done between 2006 and 2008 when the standard protocol was that of SD-NVP. The study highlights the results during transition period of evolving HIV therapeutics and adds the final nail in the coffin for SD-NVP. This regime is used only in rare situations today where the HIV positive patient is not on anti-retroviral therapy (ART) and reports for the first time during labour. However, nevirapine is still being used in combination with other anti-retroviral drugs and for prophylaxis to HIV exposed newborns.

The current WHO guidelines of June 2013 recommends two options for PPTCT: (i) provision of lifelong ART to all the pregnant and breast feeding women living with HIV regardless of CD4 count or clinical stage (earlier called Option B+) or (ii) provision of ART during pregnancy and breast feeding and thereafter providing ART as indicated.⁸

Having gone through 30 years of the global AIDS epidemic, it is now felt that, despite hindrance, PPTCT of HIV can be considered as a realistic public health goal. Government of India is committed to working towards achievement of the global target of “elimination of new HIV infections among children” by 2015 and has decided to adopt the first option i.e. lifelong ART (triple drug regime) irrespective of CD4 count or WHO clinical staging.⁹ This, in turn, is expected to help maximise the coverage to those needing treatment, avoiding the need for starting ART in future pregnancies, provide protection against parent-to-child transmission in future pregnancies and avoid drug resistance. These guidelines have been implemented across the country from 1st January 2014. The aim is to ensure integrated PPTCT services within the existing Reproductive and Child Health (RCH) programme.⁵ The recommended first-line regimen for HIV infected pregnant women is Tenofovir (TDF) (300 mg) + Lamivudine (3TC) (300 mg) + Efavirenz (EFV) (600 mg) at any gestational age.

Further, as part of PPTCT, the infant also needs to be exposed to NVP for at least 06 weeks, but increased to 12 weeks in case the mother was started on ART late in her pregnancy. However, the last word has not been said and warnings about the use of Option/Plan B + are also being published.¹⁰

Triple drug therapy decreases the viral load substantially, thus paving the way for normal delivery and breast feeding. The exclusive breast feeding is recommended by NACO to avoid chances of gastrointestinal infection and malnutrition. Vertical transmission of HIV from mother to the newborn generally occurs during contact of the foetus with vaginal secretion after rupture of amniotic membrane. Therefore elective caesarean section was considered an option for prevention of mother-to-child transmission. With decrease in viral load in vaginal secretions due to antenatal use of triple drug therapy, vaginal delivery is now considered safe and the caesarean section is recommended only for obstetric indications.

The current Armed Forces Medical Services (AFMS) protocol of Universal screening of HIV infection in all pregnant women, HAART administration to all HIV positive pregnant women from second trimester, Elective Caesarean Section for all women who have a viral load above the cut-off of 50 copies/ml and universal supplementary feeding to all newborn infants (and no breast feeding) has reduced the MTCT to near zero.¹¹

The AFMS of India is possibly in a unique position to take the lead in actual implementation of the PPTCT guidelines, providing the benchmark for rest of the country to emulate. The current Indian data shows decreasing trends in newer HIV infections amongst antenatal patients. Further success depends on execution of efficient PPTCT services, The efforts must include routine offering of counselling and testing for HIV for all women enrolled for antenatal care and ensuring lifelong supply of ART (three drug regime) for all HIV positive pregnant and breast feeding women, irrespective of their CD4 count or clinical status. Other efforts must also include nutritional and psychological counselling for HIV positive women along with active promotion of institutional deliveries of all such cases. HIV positive women with other infections need to be suitably treated and followed up.

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