A Retrospective Analysis of Maternal & Perinatal Outcome in HIV Positive Pregnancies- An Institutional Experience

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ABSTRACT

BACKGROUND

Perinatal transmission from mother to child during pregnancy, delivery, or breastfeeding is the third most common method of HIV transmission. Vertical transmission causes 90% of cases of HIV in children. We wanted to study the prevalence, maternal, and perinatal outcome of HIV positive pregnant patients attending the antenatal clinic of a tertiary care centre in North Kerala.

METHODS

This is a retrospective record based study with prospective evaluation and follow up of infants born to HIV positive mothers. Case records were studied and a detailed questionnaire was given to each subject. Patients were followed up through entire pregnancy, routine antenatal care with standard treatment protocols for HIV positive mothers were administered to all patients. Pregnancy outcomes were noted. Newborns were given prophylactic therapy as per standard protocol. HIV status of infant was followed up at eighteen weeks

RESULTS

Prevalence of HIV in this study was 0.061%. Majority 86.5% were 21 to 35 years old. Regarding partner status, 55.8% were positive, 17.2% were negative and 27% unknown. 73.5% of male partners were promiscuous, 5.8% gave history of blood transfusion and 21.2% had no risk factors. All mothers and babies received prophylaxis as per guidelines. 50% underwent LSCS. 28.8% had normal vaginal delivery. 21.2% had MTP and 1.9% spontaneous abortion. 57.7% of babies were negative for HIV, 1.9% cases showed positivity and 11.5% were defaulters.

CONCLUSIONS

The health care system of Kerala is well above the national average and the general awareness is also better, which reflected in the outcome of the mother and babies. Early pregnancy screening, safe sex practices, adequate counselling and options regarding various methods to reduce mother to child transmission should be emphasised. The need for regular follow up, importance of HAART, elective LSCS, and avoidance of breast feeding should be highlighted and necessary steps taken.

KEYWORDS

Perinatal, Maternal, Outcome, Transmission, HIV, Pregnancy

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BACKGROUND

The first AIDS case was detected in India in 1986 and since then HIV infection has been reported in all states and union territories. India launched a National AIDS Control Program in 1987. As per the National Aids Control Organization, national adult HIV prevalence is estimated at 0.26% in 2015 with the prevalence of 0.30% among males and at 0.22% among females. The total number of people living with HIV in India is estimated at 21.17 lakhs (17.11–26.49 lakhs) in 2015.[1] The prevalence of HIV infection among pregnant women in India has been coming down and current prevalence is around 0.7%. But still India is among the top 10 countries with high prevalence of HIV among pregnant women and is the third largest country with HIV epidemic. HIV in pregnancy is a matter of great concern, especially to prevent HIV transmission to children. Mother-to-child transmission of HIV is the most common cause of transmission of HIV in children. As per UNAIDS percentage of pregnant women living with HIV who were taking antiretroviral therapy for preventing mother–to-child transmission of HIV has increased from <5% in 2005 to 14% in 2008, and number of pregnant women needing antiretroviral treatment is estimated to be around 35,000 in 2015[2] An estimated 430000 new HIV infection occurred among children under age 15 in 2008.[3] More than 50,000 babies worldwide contract HIV from their mothers; 90% of these cases occur in developing countries. Most of new infections are believed to stem from transmission in utero, during delivery or post-partum as a result of breast feeding. HIV can be transmitted from mother to child during pregnancy, during delivery, or through breast milk. This is the third most common way in which HIV is transmitted globally.[4] In the absence of treatment, the risk of transmission before or during birth is around 20% and in those who also breastfeed 35%. As of 2008, vertical transmission accounted for about 90% of cases of HIV in children. With appropriate treatment the risk of mother-to-child infection can be reduced to about 1%.

Prevention of parent to child transmission (PPTCT) program has been launched in year 2002. Preventive treatment involves the mother taking antiretroviral during pregnancy and delivery, an elective caesarean section, avoiding breastfeeding, and administering antiretroviral drugs to the newborn.[5] Antiretroviral therapy should be offered to all pregnant women infected with HIV to reduce the risk of perinatal transmission to below 2%. The reduction in mother-to-child transmission of human immunodeficiency virus (HIV) is regarded as one of the most effective public health initiatives. In the absence of treatment, the risk of vertical transmission of HIV is as high as 25-30%.[6]

This study was done at a tertiary level referral hospital in North Kerala. The aim of the study was to look at the trend of HIV positive pregnancy patients attending the antenatal clinic of the hospital and to study the maternal and perinatal outcome.

METHODS

Study was initiated after getting the approval of institutional ethics committee. It was a retrospective, descriptive and comparative audit. This was a retrospective record based study with prospective evaluation and follow up of infants born to HIV positive mother. The study was conducted at a tertiary level Government referral hospital catering to population of five districts in north Kerala. The hospital was following the PPTCT (Prevention of Parent to Child Transmission) policy with routine counselling and testing in the antenatal period.

A retrospective record based study of 52 cases of HIV positive antenatal patients attending gynaecology and family planning OPD at IMCH, Calicut during a period of 2 years from November 2006 to October 2008 was done. Patients were selected based on the serology status for HIV. Sero positivity was the inclusion criteria irrespective of their gestational age, parity, previous status or treatment status. Once enrolled into the study, details from the case records were noted and the selected patients were subjected to a questionnaire addressing details of name, age, socioeconomic status, marital status, obstetric history, HIV status of husband, risk factors, associated genital infections, HIV status of previous pregnancy and child, treatment status of mother and baby, mode of delivery and outcome of current pregnancy. Patients were followed up through entire pregnancy and standard treatment protocols for HIV positive mothers, HAART (highly active anti-retroviral therapy) were administered. The study was followed through all HIV positive antenatal patients till the termination of pregnancy which included spontaneous abortion, medical termination of pregnancy, delivery, or stillbirth. Irrespective of the mode of delivery new born babies were given prophylactic HAART regime as per standard protocol. The mother and baby were followed up for routine post-natal checkup. HIV status of infant was followed up at eighteen weeks. Communication follow up was done by telephone or by post. Data was analysed in terms of age, parity, male risk factors and positivity, previous HIV status, other associated infections, status of previous child, nevirapine prophylaxis in mother and newborn, pregnancy outcome, mode of delivery and follow up of newborn.

RESULTS

Total numbers of deliveries were 83726 during the study period. Of these 52 HIV positive cases were noted. Prevalence of HIV in this study was 0.061%.

Out of the 52 patients, 45 women (86.5%) were in the 21-35 years age group. 4 (7.7%) were less than 20 years and 3 (5.8%) were more than 35 years of age. This is consistent with national average which shows most of the infections in the sexually active reproductive age group. Regarding parity, 23 (44.2%) were primigravidas and 29 (55.8%) were multigravidas.

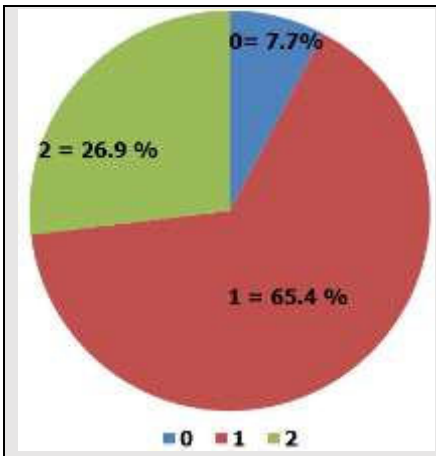

Figure 1. Status of Male Partner

(0 – Negative, 1 – Positive,
2- Unknown)

Out of the 52 couples, 34 (65.4%) of the male partners were found to be affected. 4 (7.7%) were negative and the status of the remaining 14 (26.9%) was unknown (Figure 1). This reflects upon the promiscuous nature of the male partners.

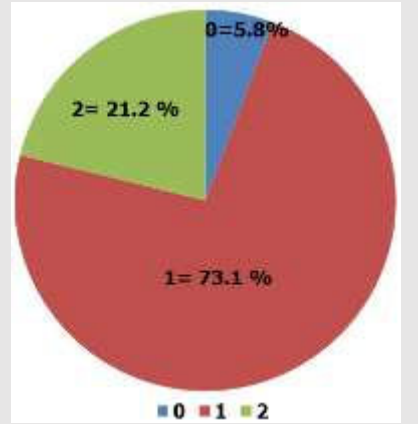

Figure 2. Risk Factor - Male Partner

0- Blood Transfusion, 1- Heterosexuality, 2- No Risk Factors

Regarding the risk factor associated with male partner behaviour (Figure 2), heterosexuality accounted for 38 (73.1%) while blood transfusion accounted for 3 (5.8%) No risk factors were identifiable in the remaining 11 (21.2%).

Associated Infections

47 (90.4%) did not have any significant associated infections. The general health of the study population was good and no cases of full blown AIDS were noted.

Previous HIV Status

Regarding the HIV status in previous pregnancy among multiparous, 6 (20.7%) were negative 2 (6.9%) were positive and 21 (72.4%) did not know their Prior HIV status.

Status of Previous Child

Out of the 29 multigravidas, 7 (24.1%) were found to be negative and the status of the remaining 22 (75.9%) was unknown.

Nevirapine Prophylaxis for Mother

Regarding nevirapine prophylaxis for the mother, all the 40 (76.9%) who underwent delivery were given standard dose of nevirapine. In the remaining 12 cases (23.1%) it was not applicable.

Nevirapine Prophylaxis for New Born

39 (75%) children who were born alive were immediately given the standard recommended dose of nevirapine.

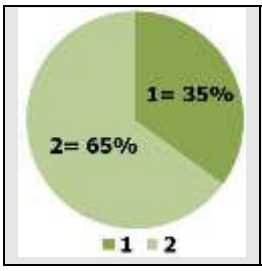

Figure 3. Mode of Delivery

1 – Normal Delivery; 2 – Cesarean Section

Out of the 40 patients which resulted in birth, 14 (35%) had a normal delivery and 26 (65%) went for lower segment caesarean section**.**

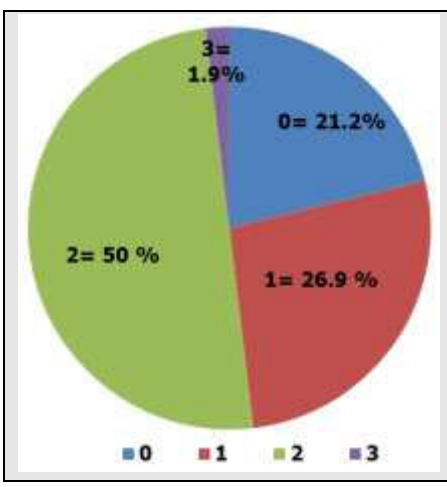

Figure 4. Pregnancy Outcome

0 = opted for termination; 1= vaginal delivery; 2= cesarean section; 3= spontaneous abortion

Out of the 52 HIV positive pregnancies, 40 (76.9%) resulted in delivery either vaginal or by LSCS. 11 (21.2%) opted for 1st trimester termination of pregnancy and 1 (1.9%) resulted in spontaneous miscarriage.

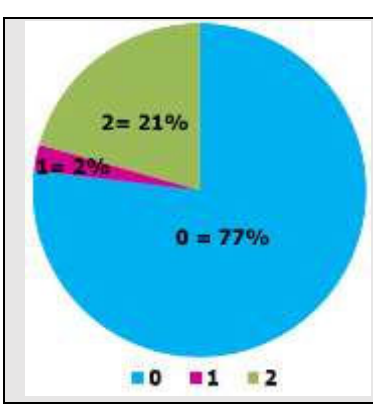

Figure 5. Followup of Newborns

0 = negative; 1 = positive; 2 = lost

Out of the 39 pregnancies which resulted live birth, 30 (76.9%) of newborns were negative in our follow up. 1

(2.5%) were found to be seropositive and the rest 8 (20.6%) did not turn up for follow up.

DISCUSSION

In 2017, there were 110,000 children age 14 and younger in Asia and the Pacific living with HIV.[7] An estimated 21000 children under the age of 15 years were newly infected with HIV in Asia in 2008. Mother to child transmission has been responsible for a relatively modest share of new HIV infection in the region. In 2007, perinatal transmission accounted for an estimated 1.1% of HIV transmission in Asia. The percentage of HIV infected pregnant women in Asia who received ARV drugs for the prevention of mother to child transmission has very gradually increased over the years. In 2004, only 4% of mothers received ARV. By 2008, 25% received in Asia. Coverage has improved consistently and still by 2015, only 38% of pregnant women living with HIV received PMTCT treatment.[8] The aim of the study was to find the outcome and prevalence of HIV positive pregnancies in a tertiary level centre. Even though the study has had its limitations, the general observations show many glaring facts which needs to be highlighted in our approach to HIV positive pregnancies.

The general prevalence of HIV positive women in Kerala is one of the lowest in India. Around 0.13% against a national average of 0.6%. The prevalence in the study at our institute was found to be 0.06%, which reflects the general awareness and improved health scenario in the state. The incidence of HIV positive pregnancy is showing an increasing trend over the years. Even though negligible, 12 in 2005 (0.05%) rose to 14 in 2008 (0.08%). Majority of the cases were referred from peripheral centres. Most of the patients were not screened in early pregnancy and therefore, appropriate treatment could not be initiated earlier. The need for first trimester screening should be emphasized. During pregnancy there is a decrease in immunoglobulin and complement levels, which actually should make the patient more prone to infection. But in our study the rate of infection was not significant. Pregnancy appears to have little effect on the progress of disease in symptomatic HIV positive women or in those with early infection, although there may be more rapid progression in women with late stage HIV disease.[9] The infection rate in our patient was 1.9%. This may be attributed to the general improved nutritional status and health awareness in Kerala. HIV infection has been reported to have little effect on pregnancy outcome or complications in the developed world. It is often difficult to determine the relative contribution of HIV infection and inadequate antenatal care to adverse outcomes in these women.[10] Preterm labour has been reported to be more common in HIV positive females with rates as high as double those seen in unaffected women.[11] But in our study only one case of preterm labour was reported (1.9%). There was little difference in the birth weight of babies born to HIV infected women compared to non-infected.[12] The incidence of fetal growth restriction or low birth weight was 1.9% in our analysis. Only one baby had birth weight below 2.5 kg.

The routine use of antiretroviral therapy has drastically reduced the mother to child transmission. Early initiation of ART, considering the risk factors and proper counselling and need to take steps to reduce mother to child transmission has shown a tremendous effect.[13] The drawback or limitation of our study was the lack of long term follow-up of patients who were given ART. As per parity, primigravida (56%) were more affected than multigravidas. The promiscuous nature of the partners were an alarming 73% which shows the importance and need for safe sex practice. Even though the ideal plan of management is to go for elective Lower Segment Caesarean Section by 38 weeks to reduce mother to child transmission, it was not possible to implement it in all cases. Around 21% opted for medical termination of pregnancy once being identified as seropositive. 27% underwent vaginal delivery and 52% underwent lower segment caesarean section with sterilisation. The social stigma associated with the condition inhibited the family being brought in for efficient and effective post-natal management. 50% of the deliveries were by Caesarean Section. Prolonged rupture of membranes has been associated with increased risk of transmission in a number of studies and is an important risk factor. In an American study duration of rupture of membranes of over four hours nearly doubled the risk of infection, regardless of the eventual mode of delivery.[14] Delivery by caesarean section has been shown to be protective in some prospective follow up studies but not in all[15] Only 3 babies (8.6%) were found to be positive in the entire study groups. 30 babies (85.7%) were found to be negative in the first year and follow up, while 2 babies (5.7%) were defaulters. All together only 33 patients turned up for follow up.

CONCLUSIONS

The health care system of Kerala is well above the national average and the general awareness is also better, which is reflected in the outcome of the mothers and babies. Early pregnancy screening, safe sex practices, adequate counselling and options regarding various methods to reduce mother to child transmission should be emphasised. The need for regular follow up, importance of HAART, elective LSCS, and avoidance of breast feeding should be highlighted and necessary steps taken.

Limitations

This is a retrospective record-based study. Adequate interventions could not be emphasized. A prospective, population-based study, with a stress on reducing the social stigma associated with the condition is needed. Social stigma associated with the condition resulted in hesitancy to divulge the details. Follow up of newborn was not up to the expectation due to increased number of defaulters. Since it

was a record based study, proper intervention, counselling and need for regular follow up could not be emphasised.

Recommendations

1. Adolescent education regarding safe sex practices and contraception.
2. Routine HIV screening in 1st trimester of pregnancy itself.
3. Need for effective education, counselling, and the importance of regular follow up.
4. Emphasise the need for early initiation of ART to reduce the mother to child transmission.
5. Maintain registry of babies born to HIV positive mothers and stress upon the need for timely follow up and continuation of medications.
6. Strengthen the counselling services offered to couples and liberalise the indications of family planning services as per need.
7. Public awareness to reduce the stigma associated with the condition.

Financial or Other Competing Interests: None.

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