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RESEARCH ARTICLE

A RETROSPECTIVE STUDY OF FETOMATERNAL OUTCOME IN HIV POSITIVE PREGNANT WOMEN

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Abstract

Background: In present scenario Acquired immunodeficiency syndrome is one of the worst global health concerns. HIV has a dramatic impact on the health of mother and children. Parent to child transmission of HIV is a major route of new infection in children

Methods: A retrospective study was conducted in Jklon hospital, kota from May 2021 to April 2022. All HIV positive pregnant women who were on ART or not and delivered in our hospital were selected. Maternal and fetal outcome variables were analysed.

Results: Total deliveries during the study period were 9046. Out Of these HIV positive pregnant women were 36, prevalence being 0.3%. Primigravida were found to be 41.66% during the study period from may 2021 to April 2022. 47.22% were diagnosed HIV positive during pregnancy, vaginal deliveries were 77.77% and caesarean section was 22.22%. birth weight <2kg in 8.3% and IUFD were 8.3%. Nevirapine prophylaxis were given to 91.66% of neonate

Conclusions: our result suggest that Early diagnosis and initiation of therapy will prevent transmission to their children and better fetomaternal outcome. In patients who are on ART education and counselling can alter maternal and neonatal outcome. Awareness and information is important to increase access to PPTCT services. Team approach involving an experienced obstetrician, neonatologist and physician gives hope of having a healthy uninfected baby for HIV infected mothers.

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Introduction:-

AIDS was first described in June 1981 in Los Angeles, USA and is presently one of the worst global health concerns. AIDS is caused by infection with HIV, a lentivirus in the retrovirus family. Two types of HIV have been identified, HIV-1 and HIV-2. Majority of HIV infections are caused by HIV-1, but HIV-2 has been found to infect individuals in certain parts of Africa¹. India has third largest pool of HIV cases in the world and 2.14 million people living with HIV¹. Parent to child transmission of HIV is major route of new HIV infection in children. Pregnant women who are found HIV positive should have immediate and lifelong ART to treat HIV and improve her own health and maximally suppress maternal viral load prior to conception to decrease the risk of perinatal transmission and HIV transmission to uninfected partner². In the absence of any interventions transmission rate of MTCT range from 15-45%. This rate can be reduced to level below 5% with effective interventions³. HIV infection in pregnancy has

become the most common complication of pregnancy in some developing countries. This has major implications for the management of pregnancy and birth.

HIV is transmitted in only three ways:

1. through unprotected sexual intercourse heterosexual or homosexual;
2. through blood or blood products, donated semen or organ
3. from an infected mother to her child (vertical or mother-to-child transmission)

Effect of pregnancy on the natural history of HIV infection In pregnancy, immune function is suppressed in both HIV-infected and uninfected pregnant women⁴.

Pregnancy does not seem to adversely affect the course of HIV infection, progression or survival. The decline in the CD4 cell count in women with HIV during pregnancy resolves typically in the postpartum period and is attributable to haemodilution⁵

Effect of HIV infection on pregnancy

HIV infection is associated with varying rates of adverse pregnancy outcomes. Some of the known associated poor outcomes include increased spontaneous miscarriages, stillbirths, increased perinatal mortality, intrauterine growth restriction, low birth weight, and chorioamnionitis⁶. Because of immunosuppression, HIV can adversely affect the frequency and course of many infections in pregnancy, including genital herpes simplex, human papillomavirus, vulvovaginal candidiasis, bacterial vaginosis, syphilis, trichomonas vaginalis, cytomegalovirus, toxoplasmosis, hepatitis B and C, malaria, urinary tract infections and bacterial pneumonia. Besides, parasitic infestations and HIV-related opportunistic infections - such as tuberculosis, pneumocystis jirovecii pneumonia seem to be frequent during pregnancy and in the puerperium⁷.

Mother-to-child transmission

Globally, an estimated 1.3 million women and girls living with HIV become pregnant each year. In the absence of intervention, the rate of transmission of HIV from a mother living with HIV to her child during pregnancy, labour, delivery or breastfeeding ranges from 15% to 45%⁽⁸⁾. Effective strategies for the prevention of MTCT (PMTCT) reduce this risk to under 2% [9,10]

Factors associated with an increase in the risk of transmission include

- 1 viral factors, such as viral load, genotype and phenotype, strain diversity and viral resistance;
- 2 maternal factors, including clinical and immunological, nutritional status and
- 3 behavioural factors such as drug use and sexual practice;
- 4 obstetric factors such as duration of ruptured membranes, mode of delivery

Methodology:-

A retrospective study of detection of HIV positive among all the antenatal patients attending OPD and including the patients coming in Emergency services and delivered in Department of Obstetrics and Gynecology JKLON Hospital, Kota Rajasthan (India) from May 2021 to April 2022 were included in the study. Patients satisfying the inclusion criteria were taken in study. The case record of pregnant women with HIV positive status were selected from labour room record book and PMTCT clinic and follow up detail of both mother and child were obtained from ICTC centre. Maternal variables analysed were Age, parity, time of diagnosis, obstetrics complication, mode of delivery. Neonatal variable analysed were birth weight, feeding practice and risk of HIV transmission. Maternal and fetal outcome variables were presented as frequencies and percentages. Mothers and babies were managed according to NACO guidelines.

Results:-

The Total no. of deliveries from April 2021 to April 2022 were 9046 'out of which 36 HIV positive the prevalence of HIV infection was 0.39%

Total no. of deliveries	HIV positive	Prevalence
9046	36	0.39%

Table 1:- Age wise distribution.

Age	Number	Percentage
20-30 year	23	63.88%
>30 year	13	36.11%

Most of the cases were between 20-30 years, which is the most sexually active age group. Prevalence of HIV infection in this target group can be reduced by providing information, education and effective behaviour change communication

Table 2:- Parity wise.

Parity	Number	Percentage
G1	15	41.66
G2	12	33.33
G3 or more	9	25

Out of 36 hiv positive pregnant women, 15 were primigravida ,12 were second gravida and 9 were gravida third or more. hence in present study majority of HIV positive pregnant women were primigravida.

Table 3:- Time of diagnosis.

Time of diagnosis	Number	Percentage
Prepregnancy	19	52.22
During pregnancy	17	47.22

Out of 36 HIV positive pregnant women , 19 (52.22%) were diagnosed HIV positive before pregnancy and 17(47.22%) were diagnosed HIV positive during pregnancy . Those diagnosed before pregnancy were mostly taking ART so risk of transmission to their neonate is less. Risk of transmission is more when ART was started during later months of pregnancy

Table 4:- Mode of Delivery.

Mode of Delivery	Number	Percentage
Vaginal	28	77.77%
Caesarean	8	22.22%

LSCS was performed in 8 (22.22%) women and vaginal delivery occurred in 28 (77.77%) women. In present study more vaginal deliveries were occurred. LSCS was performed for obstetrics indication only.

Obstetric Complication

Table 5:- Obstetric Complications.

Obstetric complications	Number	Percentage
Preterm birth	8	22.22%
IUGR	3	8.3%
Pre eclampsia	5	1.3%
Oligohydramnios	5	1.3%
Anemia	10	3.8%
IUFD	3	8.3%

Out of 36 HIV positive pregnant women 34 had obstetrics complications. 8(22.22%) women had preterm deliveries, 03(8.3%) had IUGR, 05(1.3%) had preeclampsia, 05(1.3%) had oligohydramnios, 10 (3.8%) had anemia, 03 (8.3%) had still birth babies. All women were managed accordingly

Table 6:- Nevirapine prophylaxis.

Nevirapine prophylaxis	Number	Percentage
Yes	33	91.66%
No	3	8.3%

Out of 36 HIV positive deliveries, 33 (91.66%) neonate received nevirapine prophylaxis

Discussion:-

There were 36 HIV positive pregnant women during the study period, prevalence of HIV infection was 0.3%. In present study age of the largest group of HIV positive pregnant women were between 20-30 years. 41.66% were primigravida and 33.33% were multigravida. 52.22% were diagnosed HIV positive before pregnancy and 47.22% were diagnosed during pregnancy. Those who diagnosed before pregnancy mostly taking ART so, risk of transmission was less. HAART for mothers effectively reduces the risk of infant HIV infection. This would require ART for at least 6 months. The effectiveness in preventing MTCT is related to suppressed viral load. There was 28 (77.77%) vaginal deliveries and 8 (22.22%) caesarean section. Mode of delivery does not affect neonatal outcome. According to NACO, caesarean section not recommended for prevention of mother to child transmission particularly where women taking ART for their own health. LSCS were performed for obstetrics indication only. Obstetrics complications were developed in 58.62%. Preterm deliveries were 22.22% and 77.76% were delivered at term pregnancy. Anemia developed in 3.8%, preeclampsia were in 1.3% patients, IUFD in 8.3%, IUGR in 8.3%, oligohydramnio in 1.3%, Nevirapine prophylaxes were given to 91.44% neonate. Follow up of mothers and babies were done in ART centre. During follow up baby's dry blood spot was done at 6 week, 6 month, 18 month. Out of 33 live babies 2 were diagnosed HIV positive at 6 week. Confirmation of HIV status was done at only 18 month. Pediatric ART initiation was done after confirmation of HIV status. In absence of any intervention transmission rate of MTCT high. Intervention not only include drug therapy but a comprehensive package including patient education and counselling as well.

Limitation of study

- 1 Women undergoing MTP and abortion
- 2 Other immunodeficiency disorder
- 3 Chronic medical disorder like hypertension, diabetes

Conclusion:-

our study suggest that Prevalence of HIV infection is more among young age group, which can be reduced by providing information, education and behaviour change communication. Early detection of HIV through antenatal testing would result in decrease in pediatric HIV infection. Appropriate antenatal screening, intervention and preventive strategies during pregnancy, delivery and breast feeding will bring down mother to child transmission rate below 2%. The use of antiretroviral drugs in pregnancy for the prevention of mother-to-child transmission of HIV should be encouraged and provided as widely as possible. Postpartum care must include contraceptive advice and provision, infant feeding support and appropriate follow-up for the neonate and the mother. Basic precautions in obstetric practice include the use of impermeable gloves, the use of a needle holder for suturing episiotomies or vaginal tears and appropriate disposal of needles and blood or liquor contaminated dressings and linen. Where accidental exposure to HIV occurs, by needlestick or other injury, the use of antiretroviral drugs post exposure prophylaxis greatly reduces the risk of infection

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