

Pregnancy and birth outcomes in women living with HIV: real-life experience

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Introduction

- Approximately 1.3 million women living with HIV (WLWH) become pregnant each year. ¹
- Despite advancements in antiretroviral therapy (ART) there remains a paucity of data about the efficacy of ART in pregnancy and birth outcomes. ²

Study Design and Methods

- This is a retrospective case record analysis of 31 WLWH delivering 33 pregnancies between 2019 and 2023, followed at San Paolo Hospital, Milan.
- Effect of use of ART during pregnancy, preterm birth (PTB), intrauterine growth restriction (IUGR) and birth outcomes, were analysed. Data were retrieved from medical records and presented descriptively.

Results

- The median age of the women was 36 years (IQR 33;38). 7 (21%) patients were Italians and 26 (79%) were foreigners.
- Among 33 pregnancies, 7(21%) occurred in newly diagnosed women, while 26(79%) occurred in women in active follow-up.

ART REGIMEN DURING PREGNANCY

- 5(71%) of newly diagnosed women initiated ART during the first trimester, with all regimens being INSTI-based (Table 1).

Table 1- ART in naïve patients

| ART regimen during pregnancy N=7 | Regimen | Number (%) |
|-------------------------------------|-------------|------------|
| | RAL/TDF/FTC | 2 (29%) |
| | BIC/TAF/FTC | 2 (29%) |
| | DTG/TAF/FTC | 2 (29%) |
| | DTG/ABC/FTC | 1 (13%) |

- In experienced patients, at the time of discovering the pregnancy, 16(61%) were on an INSTI-based regimen, 6(24%) were on therapy with PI, and 4 (15%) were on NNRTI therapy. 6 patients (23%) changed their ART regimen to an INSTI-based therapy (Table 2).
- Viremia was undetectable at delivery in all patients except one who was non-adherent to therapy (HIV-RNA 69 copies/mL).

Table 2- ART in treatment experienced patients

| ART before pregnancy N=26 | Regimen | Number (%) |
|------------------------------|-----------------------------------|------------|
| Switch N= 26 | INSTI | 16 (61%) |
| | BIC/TAF/FTC | 6 (38%) |
| | DTG/3TC | 4 (25%) |
| | DTG + ABC/3TC | 1 (6%) |
| | RAL +TAF/FTC or RAL + TDF/FTC | 5 (31%) |
| | NNRTI | 4 (15%) |
| | RPV/TDF/FTC or PRV/TAF/FTC | |
| | PI | 6 (24%) |
| | DRV/r + TDF/FTC o DRV/r + TAF/FTC | 4 (67%) |
| ATV/r + TDF/FTC | 2 (33%) | |
| Switch regimen N=6 | RAL + TAF/FTC or RAL + TDF/FTC | 3 (50%) |
| | DTG/ABC/3TC | 1 (17%) |
| | BIC/TAF/FTC | 1 (17%) |
| | DTG + TDF/FTC | 1 (17%) |

- Both treatment-naïve and experienced patients began pregnancy with favorable CD4 counts (median CD4+ 676 cells/uL, IQR 476;778) that remained stable throughout gestation.
- In most patients, pregnancy occurred spontaneously, with only 1 patient resorting to assisted reproductive technology (ART).

PREGNANCY AND NEONATAL OUTCOMES

- Regarding pregnancy outcome, 22(67%) of the patients delivered. In the remaining cases, pregnancy resulted in an abortion, a voluntary termination and 4 patients (12%) were lost to follow-up.
- 91% of the newborns were delivered at term. 13(59%) patients had a vaginal delivery and 9(41%) had a cesarean section: only in one case the indication for cesarean section was due to detectable viremia.
- At the third-trimester ultrasound, 91% of the babies had a EFW (estimated fetal weight) percentile above the 50th (median 55th percentile, IQR 50;70).
- 99% of the newborns had a normal birth weight with a median birth weight of 3230 g (IQR 2973;3485).
- All newborn received ZDV prophylaxis for 6 weeks and no one was breastfed. All newborns tested negative for HIV-RNA (Table 3).

Table 3 – Pregnancy and neonatal outcomes

| Pregnancy outcome N=33 | Outcome | Number (%) |
|--------------------------------------|------------------------------------|------------|
| Delivery N= 22 | Delivery | 22 (67%) |
| | Miscarriage | 4 (12%) |
| | Voluntary termination of pregnancy | 2 (6%) |
| | Ongoing | 1 (3%) |
| | Lost to follow-up | 4 (12%) |
| | Delivery | |
| Week of delivery N=22 | Vaginal delivery | 13 (59%) |
| | Cesarean delivery | 9 (41%) |
| | Week of delivery | |
| Weight at birth (g) N=21 | At term (37°-41° w) | 20 (91%) |
| | Pre term (< 37° w) | 2 (9%) |
| Apgar score 1' and 5' (0-10) N=20 | Normal (≥ 2500g) | 19 (90%) |
| | Low (2500-1500 g) | 1 (5%) |
| | Very Low (1500-1000 g) | 1 (5%) |
| ZDV prophylaxis N=16 | Normal (7-10) | 20 (100%) |
| | Yes | 16 (100%) |
| Breastfeeding N=16 | No | 16 (100%) |
| | Yes | 16 (100%) |
| HIV Ab at birth N=16 | Undetectable | 16 (100%) |
| | Yes | 16 (100%) |
| HIV-RNA N=16 | Undetectable | 16 (100%) |
| | Yes | 16 (100%) |
| Peditaric follow-up N=17 | Absence of neonatal pathologies | 17 (100%) |

Conclusion

- In our cohort, all women except one achieved undetectable viremia prior to delivery, and no adverse birth outcomes such as low birth weight or preterm delivery were observed.
- However, a relatively high proportion of women (all foreigners) was lost to follow-up, underscoring the importance of monitoring and support for the optimization of care in WLWH during pregnancy and beyond.
- Viral suppression should be prioritised in all pregnant women with HIV to prevent both vertical transmission and adverse birth outcome.

References

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