Highly Active Anti-Retroviral Therapy, Pre-Exposure Prophylaxis, and assisted reproductive techniques for the conception of a seronegative baby in HIV sero-discordant couples: A retrospective analysis

Sir,

With the advent of Anti-Retroviral Therapy (ART), HIV infection has now become like any chronic illness and many infected individuals lead a near-normal life. With increasing life expectancy, many desire conceptions. We report our experience of 15 sero-discordant couples who desired to conceive.

Preprocedure, they were subjected to the following procedures:
• Preconceptual counseling explaining the procedure, the safety versus risks, and the efficacy. Positive reinforcement remained essential
• Written informed consent
• Both HIV-infected and uninfected partners were tested for the following infectious diseases and appropriately treated:
  i. Hepatitis B
  ii. Hepatitis C
  iii. Syphilis
  iv. Gonorrhea
  v. Chlamydia trachomatis.
• CD4 count and plasma viral load for the infected partner
• Semen analysis to rule out infertility.

Infected partners were treated with antiretroviral therapy (ART). Infected women were given two nucleoside reverse transcriptase inhibitors (NRTIs) with a protease inhibitor (PI) and infected males were given two NRTIs with one non-NRTIs or PIs or integrase strand-transfer inhibitor. After 4–6 months of follow-up, once viremia was suppressed to undetectable levels and CD4 counts had improved, measures for conception were offered, namely,
• Timed sexual intercourse during the periovulatory period
• If unsuccessful at 3 months, intrauterine insemination (IUI) or finally in vitro fertilization (IVF)/intracytoplasmic sperm injection (ICSI) was attempted. All the procedures of assisted reproductive techniques included sperm wash.

The uninfected partners were given tenofovir and emtricitabine combination pill for 3 days before and after attempted conception period as preexposure prophylaxis (PrEP).
OUR STUDY RESULTS

Of the 15 HIV-1 infected sero-discordant couples, five had male infected partner (female uninfected), while ten had female infected partner. The median age of males and females was 34 years and 30 years, respectively.

All the individuals in the study tested negative for hepatitis B, hepatitis C, and other sexually transmitted infections (STIs). One individual with tuberculosis received Anti-Koch’s treatment (AKT). The most common ART regimen in females was zidovudine, lamivudine, and lopinavir/ritonavir, whereas in males, it was tenofovir, emtricitabine, and nevirapine/efavirenz/darunavir/dolutegravir/raltegravir. As an adverse drug reaction to nevirapine, one patient developed Steven–Johnson's syndrome which was appropriately managed.

Undetectable viremia was obtained in 12 of 15 patients at 6 months (80%), while two took longer period to achieve undetectable levels of virus and one was lost to follow-up. During the antenatal period, all the infected women had persistent undetectable viremia (checked every 3 monthly) throughout the pregnancy except one woman whose viral load increased to 2470 copies/mL at the end of the second trimester. She received the same lopinavir/ritonavir-based therapy with escalated doses: lopinavir 200 mg/ritonavir 50 mg – two tablets 12 hourly was increased to three tablets 12 hourly. As she developed diarrhea, her regimen was shifted to the initial dosage, but was intensified with raltegravir. Her viral load returned to undetectable levels after 3 months. As she developed diarrhea, her regimen was shifted to the initial dosage, but was intensified with raltegravir. Her viral load returned to undetectable levels after 3 months. As she developed diarrhea, her regimen was shifted to the initial dosage, but was intensified with raltegravir. Her viral load returned to undetectable levels after 3 months.

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Conflicts of interest
There are no conflicts of interest.

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