

## Pregnant HIV Elite Control: Therapeutic Conduct?

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### Abstract

HIV positive patients with sustained viral load <50 copies/mL are defined as elite controls in the absence of antiretroviral therapy and normal CD4+ values. The occurrence of this type of infections in only 1 of every 300 people infected by HIV. Elite control patients (EC) account for 0.5 to 1% of all HIV-1 infected persons, who are able to control viral replication and maintain immune function over prolonged periods of time without antiretroviral therapy. The following situations have been postulated to understand the primary mechanism of viremia control: low susceptibility of CD4 cells to infection, infection with defective replication, viral control by the patient's immune system and low availability of CD4 cells susceptible to infection. Most data on viral control in elite controls suggest that HIV-specific CD8+ T cell responses are probably crucial in elite control. These can be conferred by the protective HLA alleles in some patients. Our objective is to communicate a rare case of daily presentation of external consultation in this pathology.

**Keywords:** HIV; Pregnancy; HCV

### Clinical Case

A 34 year old female patient who consults for Elisa positive for HIV in routine pregnancy control during the 20th week of gestation. Western Blot is performed confirming the infection. A serodiscordant couple does not report intravenous drug use or transfusion. CD4+ and HIV viral load were requested, which yielded the following results: CD4+ 999 cell/mm<sup>3</sup>, ND viral load (not detectable, Cobas Ampliprep/ Cobas Taqman HIV-1 Virus Test 2.0) [1].

### Physical exam

Patient lucido oriented in time and space. Preserved vital signs, no alterations are observed.

### Complementary methods

Anti-HIV serology on 3 samples, with two different enzyme-immunoassay techniques, Roche (rp=2320, 2220), Abbot (rp=587). Detectable proviral DNA. On a new sample, we repeat the viral load with ND result. We discard type 2 HIV infection using nucleic acid test for blood bank (Cobas Taqscreen MPX test, V2.0, Roche). Considering the possibility of mutations in the binding region of the primers of the quantification technique, we used a RT-PCR-NESTED protocol that amplifies protease and retro viral transcriptase, in which we did not obtain amplification product [2,3].

On the other hand, we requested serology for HBV, HCV, Chagas, Toxoplasmosis and Syphilis, all negative.

Given the incongruity in the studies performed, we contacted the parent company of Roche in the USA, where an investigation is initiated yielding the following result: sequencing of the gag region with positive result, the sequence corresponds to a Wild type virus, and sequencing of the negative LTR region. They conclude that this is a wild virus, with low or no viral load, which in the absence of treatment, corresponds to a case of HIV elite control.

Antiretroviral therapy with zidovudine/lamivudine is started twice daily. The patient is monitored during the course of pregnancy; the ACTG 076 protocol is decided. The baby was born by vaginal delivery, with negative serology, is repeated at two months where it is again

negative and again negative at three months. The baby was treated with zidovudine the first month of life [4].

### Discussion

Vertical transmission remains the main form of infection for more than 90% of children who acquire this infection. However, in pregnant women receiving antiretroviral therapy, this transmission decreased to below 2%. It can occur during pregnancy, during delivery or after delivery through breastfeeding [5,6].

So far there is no guide with precise indications about handling in this situation. The ACTG 076 study demonstrated a 67% reduction in vertical transmission with zidovudine monotherapy [7].

Regarding the time of the beginning of the treatment, both national and European guidelines recommend its establishment as soon as possible and no later than the second trimester [5,6]. In our case the patient was 20 weeks and the beginning was at the time of diagnosis.

It was decided to start with the combination of zidovudine and lamivudine in order to reduce the risk of vertical transmission. In the literature we present a case of an HIV positive female elite control in Zimbabwe 15 weeks' gestation where zidovudine monotherapy was instituted following the guidance of the BHIVA guideline and was offered to the elective cesarean patient, with therapeutic success. Lactation was contraindicated [8].

Taylor et al. Mentions the ACTG 076 monotherapy with zidovudine

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where the rate of transmission if the viral load was <1000 copies/ml of HIV RNA was 1%. Treatment reduced transmission even among women with mild or undetectable HIV viral load, suggesting that the effects of treatment are not related to decrease maternal viremia, but may also be related to HIV reduction in the genital tract and/or the preexposure prophylaxis of the infant by placental transfer of zidovudine. The introduction of TAAE (zidovudine-lamivudine-abacavir) may provide greater tranquility in the prevention of vertical transmission, however, it will expose the mother and baby to greater toxicity [9].

## Conclusion

The prevalence of HIV elite control is very low in the daily consultation and even more in the context of a pregnant patient. Antiretroviral therapy should be initiated and continued with the protocol for the benefit of the mother and the baby.

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