



**Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV Transmission in the United States**

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## Other Intrapartum Management Considerations (Last updated July 31, 2012; last reviewed July 31, 2012)

### Panel's Recommendations

- The following should generally be avoided unless there are clear obstetric indications because of a potential increased risk of transmission:
  - Artificial rupture of membranes (**BIII**)
  - Routine use of fetal scalp electrodes for fetal monitoring (**BIII**)
  - Operative delivery with forceps or a vacuum extractor and/or episiotomy (**BIII**)
- The antiretroviral drug regimen a woman is receiving should be taken into consideration when treating excessive postpartum bleeding resulting from uterine atony:
  - In women who are receiving a cytochrome P (CYP) 3A4 enzyme inhibitor such as a protease inhibitor, methergine should be used only if no alternative treatments for postpartum hemorrhage are available and the need for pharmacologic treatment outweighs the risks. If methergine is used, it should be administered in the lowest effective dose for the shortest possible duration (**BIII**).
  - In women who are receiving a CYP3A4 enzyme inducer such as nevirapine, efavirenz, or etravirine, additional uterotonic agents may be needed because of the potential for decreased methergine levels and inadequate treatment effect.

**Rating of Recommendations:** A = Strong; B = Moderate; C = Optional

**Rating of Evidence:** I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

If spontaneous rupture of membranes occurs before or early during the course of labor, interventions to decrease the interval to delivery, such as administration of oxytocin, can be considered in HIV-infected women with viral suppression and no indications for cesarean delivery.

Artificial rupture of membranes should be avoided and used only for a clear obstetric indication in women with intact membranes and detectable viral loads who present in labor and will be allowed to proceed to vaginal delivery. Data are limited on artificial rupture of membranes in women with undetectable viral loads and planned vaginal delivery. In general, the procedure should be performed only for clear obstetrical indications because of the potential, albeit small, of an increased risk of HIV transmission.

Obstetric procedures that increase the risk of fetal exposure to maternal blood, such as invasive fetal monitoring, have been implicated in increasing vertical transmission rates by some, but not all, investigators, primarily in studies performed in the pre-antiretroviral therapy (ART) era.<sup>1-4</sup> Data are limited on routine use of fetal scalp electrodes in labor in women receiving suppressive antiretroviral (ARV) regimens who have undetectable viral loads; routine use of fetal scalp electrodes for fetal monitoring should be avoided in the setting of maternal HIV infection unless there are clear obstetric indications.

Similarly, data are limited to those obtained in the pre-ART era regarding the potential risk of perinatal transmission of HIV associated with operative vaginal delivery with forceps or the vacuum extractor and/or use of episiotomy.<sup>2,4</sup> These procedures should be performed only if there are clear obstetric indications. Delayed cord clamping has been associated with improved iron status in both term and preterm infants and benefits such as decreased risk of intraventricular hemorrhage in preterm births to HIV-uninfected mothers.<sup>5-8</sup> Even though HIV-specific data on the practice are lacking, there is no reason to modify it in HIV-infected mothers.

## ***Postpartum Hemorrhage, Antiretroviral Drugs, and Methergine Use***

Oral or parenteral methergine or other ergot alkaloids are often used as first-line treatment for postpartum hemorrhage resulting from uterine atony. However, methergine should not be coadministered with drugs that are potent cytochrome P (CYP) 3A4 enzyme inhibitors, including protease inhibitors (PIs). Concomitant use of ergotamines and PIs has been associated with exaggerated vasoconstrictive responses. When uterine atony results in excessive postpartum bleeding in women receiving PIs, methergine should be used only if alternative treatments such as prostaglandin F 2 alpha, misoprostol, or oxytocin are unavailable. If no alternative medications are available and the need for pharmacologic treatment outweighs the risks, methergine should be used in as low a dose and for as short a period as possible. In contrast, additional uterine agents may be needed when other ARV drugs that are CYP3A4 inducers, such as nevirapine, efavirenz, and etravirine, are used because of the potential for decreased methergine levels and inadequate treatment effect.

## **References**

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