Revisiting lactic acidosis in an HIV-1 infected pregnant woman on antiretroviral therapy

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The apparently healthy infant was also given zidovudine, according to hospital protocol. DNA PCR HIV tests were negative at 48 hours and 2, 4, 6 and 12 months after birth.

Discussion

The incidence of NRTI-induced lactic acidosis/hepatic steatosis in HIV-infected pregnant women is unknown. Nevertheless, there are three reported cases of maternal death related to stavudine and didanosine use, two associated with fetal death (Bristol-Myers Squibb 2001; Sarner and Fakoya 2002). Non-fatal cases with this combination have also been described (Mandelbrot et al. 2003). There is also a reported case of fetal death at 38 weeks’ gestation, with stavudine and lamivudine (Luzzati et al. 1999). In all cases, the women presented after at least 6 months of therapy, with a rapidly progressive disease occurring in the 3rd trimester. This is in contrast to our case, in which the onset of the symptomatic disease was in the 1st trimester and only after 5 months of stavudine and lamivudine.

NRTI-induced lactic acidosis/hepatic steatosis have similarities to rare but life-threatening syndromes: acute fatty liver of pregnancy ( AFLP ) and the HELLP syndrome (haemolysis, elevated liver enzymes and low platelets). Data support that both of these are associated with a recessively inherited condition that compromises fatty acid oxidation. The same dysfunctional pathway may contribute to the development of NRTI-induced mitochondrial toxicity (AIDS info 2012). In our case report, early gestational age and the absence of specific clinical and laboratory features excluded HELLP and AFLP. Therefore, the diagnosis of NRTI-induced lactic acidosis seemed most likely.

Low levels of riboflavin may also be involved in the pathogenesis of NRTI-induced mitochondrial toxicity (Luzzati et al. 1999). Lower levels of this vitamin have been reported in pregnant women compared with non-pregnant women (Vir et al. 1981). Moreover, riboflavin has been used to treat lactic acidosis (Mandelbrot et al. 2003; Brinkman et al. 2000). Likewise, other vitamin B complex elements have been used as therapeutic agents (thiamine, nicotinamide, pyridoxine and dexamethasone), as well as co-enzyme Q, l-carnitine and vitamin C (Brinkman et al. 2000). Nevertheless, data in this regard is scarce to support its efficacy. Indeed, the treatment of this syndrome remains obscure and incidental. Most authors agree on the immediate interruption of antiretroviral drugs and the use of nonspecific adequate support measures.

As the benefit of ARV prophylaxis in reducing transmission of a fatal infection has long been clear, and the combination of stavudine and didanosine always seems to play a central role in the more serious reported cases of lactic acidosis, we decided to restart ARV therapy, replacing stavudine by zidovudine. The described derangement usually did not recur, probably because, as happens in vitro and also in vivo, the relative potency of stavudine in inhibiting mitochondrial gamma DNA polymerase is higher than that of zidovudine.

As pregnancy may enhance HIV-infected women’s susceptibility to nucleoside analogues lactic acidosis, healthcare professionals should be vigilant for its onset. Nonspecific symptoms can easily be undervalued, especially in the 1st trimester. However, they may represent the initial manifestation of a life-threatening syndrome and hence, always require further investigation.

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References


A 20-year-old primigravida presented with vaginal bleeding at 10 weeks, the cystic changes were no longer visible while the normal placenta was posterior and to the left. Even the normal looking placenta had some cystic changes. On further scans, the molar placenta was seen on the anterior and right side of the uterus and the normal placenta was posterior and to the left. Even the normal looking placenta had some cystic changes. At 19 weeks, the ultrasound demonstration of molar component of CHMF cases has not been reported so far in the literature.

Discussion

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