

Twins Born to HIV-1 Infected Mothers (2007–2013)

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Introduction. In Latvia the first case of HIV transmission was registered in 1998. On January 1st, 2014, the number of HIV infected children aged 1 month–16 years old was 59. Advanced HIV disease in mother associated with likelihood of transmission to infant contributes to a higher number of such cases. It is known that twins born first are at higher risk of HIV infection. As additional factors of risk transmission are considered mode of delivery, mother's age, smoking, intravenous drug use.

Aim. The aim of the study is to analyze the cases of twins born to HIV-1 infected mothers enrolled in care in Latvian Center of Infectious disease (2007–2013).

Material and methods. We investigated 9 twin pairs, who were born between 2007–2013 (in 2007 – 1; 2010 – 1; 2012 – 2; 2013 – 5). Through Caesarean section there were delivered 7 twins, vaginally – 2; 6 pairs were sex identical (boys – 2, girls – 4). For diagnosis of HIV infection in infants, ELISA kits for the detection and confirmation of HIVp24 core Ag (Innotest) and rt-RT PCR kit (Cobas AmpliPrep/TaqMan HIV-1 system, Roche) for HIV RNA detection (detection limit 20 cop/ml) and quantification were used. CD4+ cell count was detected by flow cytometry. Third generation MEIA assay (ABBOTT) was used for the demonstration of anti-HIV seroreversion in uninfected infants.

Results. The first twin pair was presented to hospital in 2007, then 1 and 2 in 2010 and 2012, accordingly. Significant increase of twins (5) born to HIV-1 infected mothers was observed in 2013. Prematurity (31–37 weeks) of deliveries observed in 89% (8 / 9) and maternal age > 30 (56% – 5 / 9) were regarded as risk factors. Mother's viral load was from undetectable (2 / 9 – 22%) to 10⁵ cop / ml (1 / 9 – 11%), more often (6 / 9 – 67%) from 10² (minimum – 5.9 10²) to 10⁴ (maximum – 7.7 10⁴), CD4+ – from 174 to 816 cells / mm³, only in 1 (11 %) > 700, as an additional risk factor – in 3 (3/9 – 33%) < 500 cells / mm³ (174–396). Five HIV-1 infected mothers received antiretroviral therapy (2 – from 14 weeks of pregnancy, others – from 23, 25 and 30 weeks), no therapy was received by four. At the time of the first visit (as a rule at the age 5–9 weeks, 1 twin – at 10 month) all 18 infants have negative HIV-1 Ag and 16 / 18 (89 %) – undetectable level of HIV viral load. Two first born children from different twins have detectable HIV-1 viral load – 7.2 × 10² (Caesarean section) and 1.2 × 10⁵ cop / ml (vaginal delivery), one was born to mother who did not receive antiretroviral therapy, the other – to mother who began ART at week 25 of gestation. The rest of the infants had no detectable HIV RNA and HIV antibody at the age 14–24 months or up to now are on follow up with no detectable HIV RNA and seroreversion trend in levels of HIV antibodies.

Conclusion. The number of twin deliveries from HIV-1 infected mothers has increased in Latvia, similarly to other industrialised countries. Recently, vertical HIV transmission has been proved in 2 / 18 infants from twin pairs, both first born to mothers that did not receive antiretroviral therapy. Most twins' mothers have one or more vertical transmission risk factors (age, born prematurity, viral load, CD4+ count).