

# Factor Associated with Undetectable Viral Load upon Delivery in Asian HIV-infected Pregnant Women for Prevention of Perinatal HIV Transmission

Ada Wai-chi LIN, Ka-Hing WONG, Kenny CHAN

Special Preventive Programme, Centre for Health Protection, Department of Health, Hong Kong SAR, China

**Background:** The use of combination antiretroviral therapy (cART) is crucial in the prevention of perinatal HIV transmission, in which the maternal HIV viral load (VL) upon delivery is an important factor.

**Methods:** Data of HIV-infected pregnant women under care of the largest HIV clinic in Hong Kong was reviewed. Using fisher exact and logistic regression, factors associated with undetectable HIV VL upon delivery were identified.

## **Results:**

From 1993 to 2012, 57 babies were born from 56 HIV-infected pregnant women. Thirty-one (55%) out of these 56 women were Chinese, 22 (39%) patients were non-Chinese Asian. Majority (91%) acquired HIV via heterosexual route, followed by injecting drug use (0.05%).

The seroprevalence for HBsAg and anti-HCV were both 7%. Thirty-seven (80%) out of 46 women with known cART regimen were prescribed protease inhibitor-based regimen, among which ritonavir boosted-lopinavir were most commonly used. Five (11%) patients were prescribed nevirapine-based cART. Majority (79%) were given zidovudine (AZT) containing regimen.

Among 45 patients with HIV VL results available upon delivery, 34 (76%) patients achieved undetectable VL <75 copies/ml. The baseline characteristics, including ethnicity, education level, route of transmission, baseline mean CD4 count (436 cells/mm<sup>3</sup> vs 395 cells/mm<sup>3</sup>, p=0.64), mean VL (36,718 copies/ml vs 27,607 copies/ml, p=0.53) were comparable between women with detectable or undetectable VL upon delivery.

Compared with those with undetectable viral load upon delivery, patients with detectable VL received shorter duration of antiretrovirals during pregnancy (median 1.2 months vs 9.2 months, p<0.016). The use of antepartum AZT (100% vs 73%, p=0.57), maternal hepatitis B and hepatitis C status, were not associated factors. Three vs none babies born from mothers with detectable and undetectable VL upon delivery respectively were HIV-infected.

**Conclusion:** Early use of antepartum cART was the key factor to achieve undetectable VL upon delivery and prevention of perinatal HIV transmission.

Correspondence: Dr Ada WC LIN adalinwc@dh.gov.hk