RESEARCH LETTER

A current HCV infection may increase the risk of preterm birth among HIV-positive women

In a recent publication, Baer *et al* pointed out that there are few studies on the association between sexually transmitted infections (STIs) and prematurity.¹ Similarly, there are limited data on prematurity in the setting of HIV and HCV co-infection. Many factors can contribute to preterm delivery in this population, both related and not related to HIV. For example, gestational age may be affected by HIV-related immunosuppression or use of antiretroviral therapy (ART).^{2,3} There is also evidence that in vitro HCV may infect the human trophoblast and cause ultrastructure changes.⁴ Relation between HCV infection and preterm birth has already been studied in HCV mono-infected population; however, HCV and HIV infections are rarely studied.⁵ We analysed the pregnancy outcomes in a cohort of HIV-positive women receiving integrated outpatient care at the Hospital for Infectious Diseases in Warsaw,⁶ whereby pregnant women are followed by a clinic gynaecologist within the HIV outpatient service. Care is delivered according to national standards

which routinely include syphilis venereal disease research laboratory (VDRL) test at entering antenatal care and other STIs are screen based on risk behaviours or symptoms. All children born from HIV-positive mothers are followed at the Department of Children's Infectious Diseases.

Between 1 January 2006 and 31 December 2017, there were 187 registered pregnancies, of which 159 had known ART status and birth outcomes. Most women (125/159, 79.1%) showed a suppressed most recent plasma HIV-1 RNA before delivery and the median CD4 cell count was 525 (IQR: 371–652) cells/ μ L. STIs were rare, with 7/159 (4.4%) women showing positive VDRL and none being actively infected with chlamydia. Of the 159 women, 58 (39.5%) were anti-HCV positive and 43/159 (27%) had a current HCV infection (HCV RNA positive).

There were 19/159 (11.9%; 95% CI: 6.9 to 16.9) preterm births; gestational age was 32–36 weeks in 17/159 (10.7%) births and 28–31 in 2/159 (1.2%). The rate of preterm birth was higher than that observed in the general Polish population (7.6% of births in 2005).⁷ When comparing the preterm and term delivery groups, we did not identify significant differences in terms of conventional risk factors for pregnancy outcomes. By multivariate logistic regression analysis, a current HCV infection was the

only variable associated with increased odds of preterm delivery (table 1). These data confirm previous observations of an increased risk of prematurity in HIV-positive women, and suggest that an active HCV infection may further increase the risk in the co-infected population.⁸

Larger studies are needed to confirm these initial observations. Meanwhile, eliminating HCV among women in childbearing age remains a topic largely neglected by clinical guidelines. We believe that HCV infection status should be included in future studies of prematurity risks among women with HIV.

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Table 1 Unadjusted and adjusted odds of preterm birth

	Unadjusted		Adjusted*	
	OR (95% CI)	P value	Or (95% CI)	P value
ART started before pregnancy (yes (n=81) vs no n=78)	1.08 (0.41 to 2.82)	0.875	–	–
PI (n=143) versus non-PI (n=16) ART	0.55 (0.14 to 2.124)	0.383	–	–
NRTI backbone in ART regimen				
ABC+3 TC versus AZT+3TC	1.61 (0.29 to 8.97)	0.228	1.40 (0.21 to 9.09)	0.438
TDF+FTC/3TC versus AZT+3TC	0.29 (0.09 to 0.94)	0.083	0.34 (0.10 to 1.17)	0.125
Other vs AZT+3TC	0.54 (0.06 to 4.64)	0.741	0.81 (0.08 to 7.87)	0.974
Active HCV infection (yes (n=43) vs no (n=116))	6.03 (2.19 to 16.6)	<0.001	4.67 (1.47 to 14.9)	0.009
HBsAg positive (n=5) versus negative	2.00 (0.21 to 19.0)	0.546	–	–
Mode of HIV infection:				
–	–	–	–	–
IDU (n=45) versus heterosexual (n=91)	2.59 (0.93 to 7.26)	0.159	–	–
IDU versus other/unknown (n=23)	0.99 (0.19 to 5.00)	0.534	–	–
Smoking (yes (n=14) vs no)	0.54 (0.07 to 1.40)	0.567	–	–
Drug use in pregnancy (yes (n=50) vs no)	3.56 (1.33 to 9.51)	0.011	1.52 (0.48 to 4.86)	0.475
Year of pregnancy (for each year higher)	0.94 (0.81 to 1.09)	0.393	–	–
Number of pregnancies for each number higher	0.95 (0.67 to 1.36)	0.797	–	–
Last CD4 cell count for each 100 cells more	0.84 (0.65 to 1.09)	0.192	–	–
Maternal age at delivery for each year older	1.02 (0.92 to 1.13)	0.742	–	–
Detectable HIV-1 RNA before delivery	1.02 (0.31 to 3.31)	0.973	–	–

*All factors with $p < 0.1$ were included into adjusted model $n = 159$.

ART, antiretroviral therapy; IDU, injecting drug use; NRTI, nucleoside reverse transcriptase inhibitor; PI, protease inhibitor.

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