

Pregnancy characteristics and outcomes of women with vertically-acquired HIV in the UK

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Background

- In the UK there are approximately 900 pregnancies to women living with HIV every year and the vertical transmission rate is under 0.3%
- Worldwide, increased availability of antiretroviral therapy (ART) and earlier treatment has resulted in a growing number of reproductive-aged women with vertically-acquired HIV (WVHIV)
- However, knowledge gaps on their characteristics and pregnancy outcomes exist
- Building on previous work (Byrne et al 2017¹) we present population-level pregnancy outcome data for this important emerging cohort in the UK

Objectives

- To describe maternal and pregnancy characteristics of WVHIV and trends over time, and assess birth and infant outcomes of WVHIV
- To compare specific characteristics and outcomes in WVHIV with those in women living with likely heterosexually-acquired HIV (WVHIV)

Methods

- The Integrated Screening Outcomes Surveillance Service (ISOSS) is part of the NHS Infectious Diseases in Pregnancy Screening Programme commissioned by NHS England
- All pregnancies to women living with HIV in the UK, their infants and any children diagnosed with HIV (<16yrs age) are reported to ISOSS.
- Long term follow-up of all children living with HIV is carried out by the Children's HIV and AIDS Reporting System (CHARS)
- Data have been collected for >30 years, and concurrent paediatric and maternity reporting streams offer a unique opportunity to link historical paediatric reports of women diagnosed as children and seen for paediatric care in the UK to pregnancy reports.

- Definition of WVHIV:** women diagnosed <14 years of age with no other risk factors apparent
- Analysis dataset:** pregnancies with known outcomes reported to ISOSS between 01/01/2006 and 31/12/2021 (no pregnancies to WVHIV <2006)

Results

- 17,478 pregnancies were reported overall, including 202 (1.6%) pregnancies to 131 WVHIV
- Over the period there was a 10-fold increase in the proportion of pregnancies in WVHIV from 0.3% (15/5011) in 2006-09 to 3.5% (83/2403) in 2018-21, while there was a decrease in the proportion of pregnancies to WVHIV ($p < 0.001$)

Maternal characteristics: diagnosis and socio-demographics

- Median age at diagnosis among WVHIV was 6 years (IQR:2-11) with 22 women were diagnosed in their first year of life
 - 62% (81/131) were diagnosed in the UK, and 85% (112/131) were reported to ISOSS in childhood
 - 18% (23/131) had history of an AIDS-defining illness and of these 52% (12/23) had an AIDS-defining illness at HIV diagnosis
- 54% of pregnancies to WVHIV were in African-born women vs 74% for WVHIV; 37% were UK-born compared to 15% for WVHIV, $p < 0.001$
- Median age at delivery was 24 years (IQR: 20-27) for WVHIV vs 33 years (IQR: 29-37) for WVHIV

Pregnancy characteristics

- 81 WVHIV had one pregnancy, 34 had two, 16 had ≥three
- Differences in key pregnancy characteristics for WVHIV vs WVHIV are shown in Figure 1

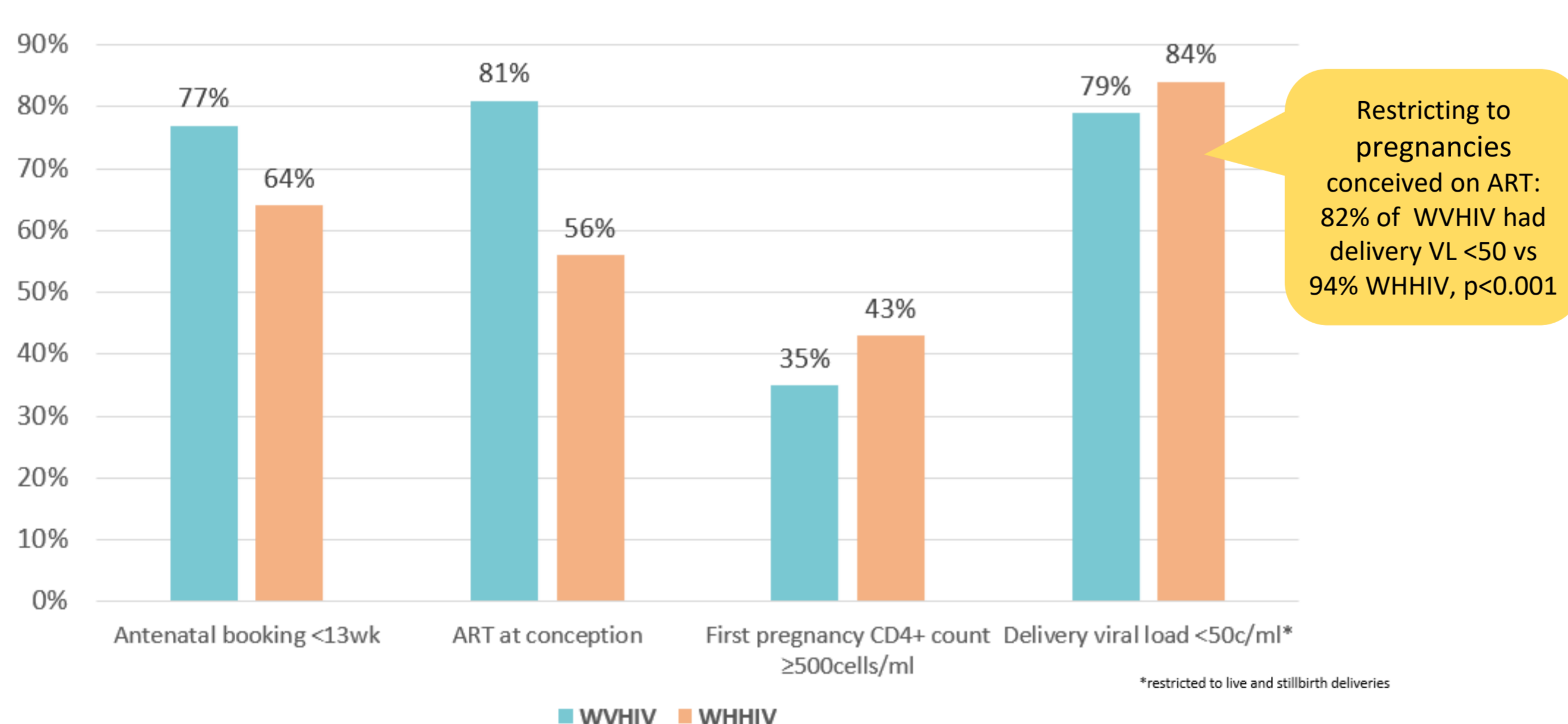


Figure 1: Comparison of characteristics of pregnancies in WVHIV vs pregnancies in WVHIV, 2006-21

Pregnancy outcomes

Pregnancy outcomes for WVHIV were: 170 livebirths (84%), 10 miscarriages (5%), 18 terminations (9%) and 4 stillbirths (2%)

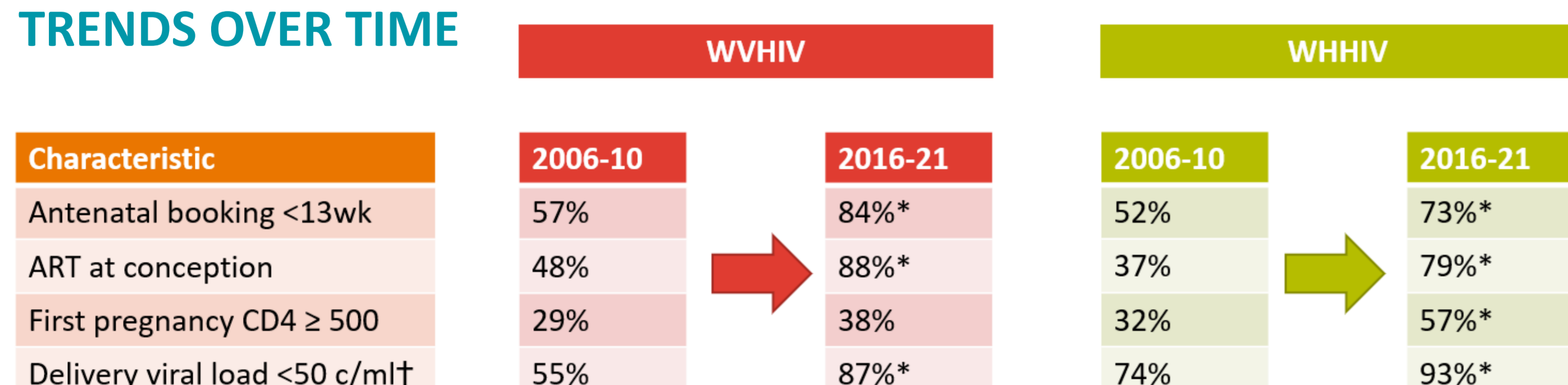
Table 1: Pregnancy outcomes among live and stillbirth deliveries

Infant outcome	WVHIV	WVHIV	p-value
Gestational age (weeks)			
≥37	142 (81.6%)	13219 (87.5%)	<0.001
35-36	9 (5.2%)	917 (6.1%)	
≤34	23 (13.2%)	964 (6.4%)	
Birthweight (kg)			
≥2.5	126 (75.5%)	12669 (86.3%)	<0.001
1.5-2.5	33 (19.8%)	1605 (10.9%)	
<1.5	8 (4.8%)	400 (2.7%)	
Mode of delivery			
Elective caesarean	55 (32.2%)	5297 (35.3%)	0.291
Emergency caesarean	51 (29.8%)	3702 (24.7%)	
Vaginal	65 (38.0%)	6015 (40.1%)	

Preterm birth and low birth weight more common among pregnancies in WVHIV than WVHIV

- Congenital condition rate: 5.7% (95% CI: 2.7%, 10.6%) among deliveries to WVHIV vs 4.3% (4.0%, 4.7%) to WVHIV
- Of infants born to WVHIV with complete follow-up, one was diagnosed HIV-positive (1/150, 0.66%)

TRENDS OVER TIME



† restricted to live and stillbirth deliveries
* significant trend over time ($p < 0.05$)

Figure 2: Time trends in pregnancy characteristics among WVHIV and WVHIV, 2006-21

Conclusions

- WVHIV are a growing sub-population in the UK and HIV-related markers have improved over time
- There has been one case of second-generation vertical transmission
- Further work is needed to understand why fewer WVHIV have undetectable VL at delivery, in order to optimise outcomes
- Other areas of interest in this group includes sequential pregnancies and longer-term outcomes of children born HIV-free.