Antiretroviral therapy in pregnancy in England in 2019-2022: common regimens and treatment modifications

P003

Rebecca Sconza[1], Helen Peters[1], Laurette L Bukasa[1], Laura Byrne[2], Alasdair Bamford[3], Hermione Lyall[4], Graham P Taylor[5], Claire Thorne[1]

[1] UCL Great Ormond Street Institute of Child Health, London, UK [2] St George's, University of London, London, UK [3] Great Ormond Street Hospital for Children NHS Foundation Trust, London, UK [4] Imperial College Healthcare NHS Trust, London, UK [5] Imperial College London, London, UK

BACKGROUND

- In England, ~90% of pregnant people living with HIV are diagnosed prior to pregnancy and nearly all receive antenatal antiretroviral therapy (ART); pregnancy treatment guidelines are set by the British HIV Association (BHIVA)
- The Integrated Screening Outcomes Surveillance Service (ISOSS) carries out population-based surveillance of HIV in pregnancy in England on behalf of the NHS Infectious Diseases in Pregnancy Screening Programme
- Routine ISOSS surveillance includes reports of all antiretroviral drugs received during pregnancy
- We aimed to describe commonly used ART regimens and the frequency of regimen modification in pregnancy in recent years using real-world surveillance data from ISOSS

METHODS

- ISOSS surveillance covers all pregnancies in people living with HIV diagnosed by the point of delivery
- Analyses included pregnancies in people living with HIV-1 reported to ISOSS with estimated date of delivery (EDD) in 2019-2022
- We defined the first antenatal ART regimen as the earliest regimen reported during pregnancy
- We described first antenatal ART regimens reported in ≥10 pregnancies (i.e., "common regimens"); some analyses were restricted to "most common regimens" (reported in >5%)
- Regimen modification was defined as any change to the first antenatal ART regimen (i.e., switch, intensification, simplification), excluding dosage changes

RESULTS

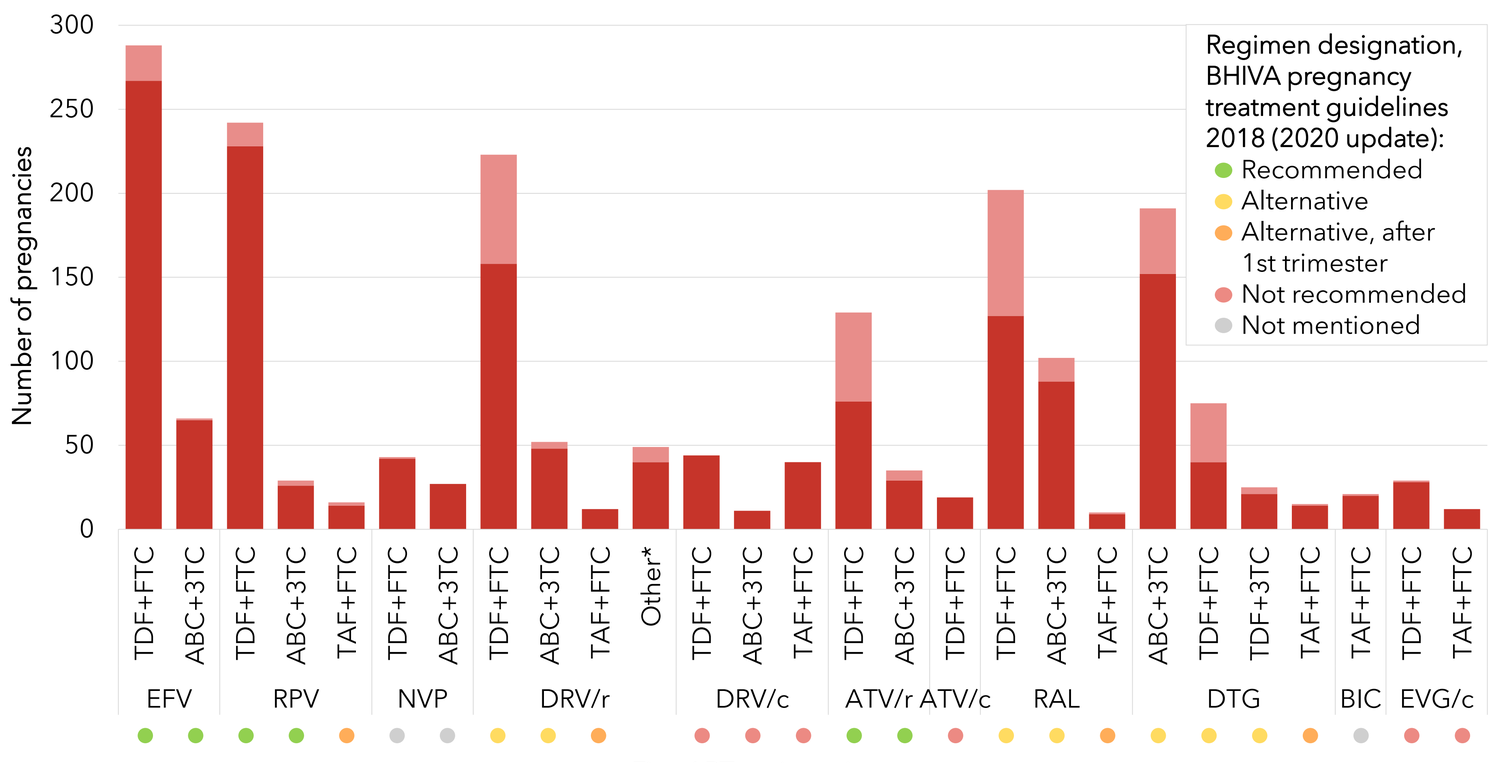
- 2464 pregnancies in 2132 individuals were included: 2166 (87.9%) live births, 237 (9.6%) miscarriages, 44 (1.8%) terminations of pregnancy, 3 (0.1%) ectopic pregnancies, 14 (0.6%) stillbirths
- Antenatal ART was used in 98.9% (2436/2464) of pregnancies overall and in 99.9% (2179/2180) of pregnancies ending in live/stillbirth
- 89.8% (2210/2460) of pregnancies were in individuals diagnosed pre-pregnancy and 81.4% (2001/2459) of pregnancies conceived on ART (where data complete)
- Table 1 shows pregnancy characteristics by timing of ART
- Among those starting ART during pregnancy, 55.1% (250/454) were diagnosed during pregnancy (4 missing diagnosis timing), and median gestational age at ART start was 15 completed gestational weeks (IQR: 12-19)
- First antenatal ART regimens by timing/type are presented in Figure 1; most common regimens are shown in Figure 2

Table 1. Characteristics of pregnancies by antenatal ART timing, *N*=2459

	Conceived on ART, *n*=2001	**Started ART in pregnancy**, *n*=458	**Total**, *N*=2459	
	n (%) or median (IQR)	*n* (%) or median (IQR)	*n* (%) or median (IQR)	*p*-value
Age at EDD, years	35 (31-39)	33 (28-37)	35 (30-39)	<0.001
Age at EDD, years				<0.001
<20	6 (0.3)	6 (1.3)	12 (0.5)	
20-29	339 (16.9)	144 (31.4)	483 (19.6)	
30-39	1212 (60.6)	243 (53.1)	1455 (59.2)	
≥40	444 (22.2)	65 (14.2)	509 (20.7)	
Region of origin (*n*=2440)				0.045
Africa	1270 (63.9)	275 (61.0)	1545 (63.3)	
UK	388 (19.5)	79 (17.5)	467 (19.1)	
Other	331 (16.6)	97 (21.5)	428 (17.5)	
Viral load <50 copies/mL at delivery (*n*=1725)*	1313 (94.9)	290 (84.8)	1603 (92.9)	<0.001

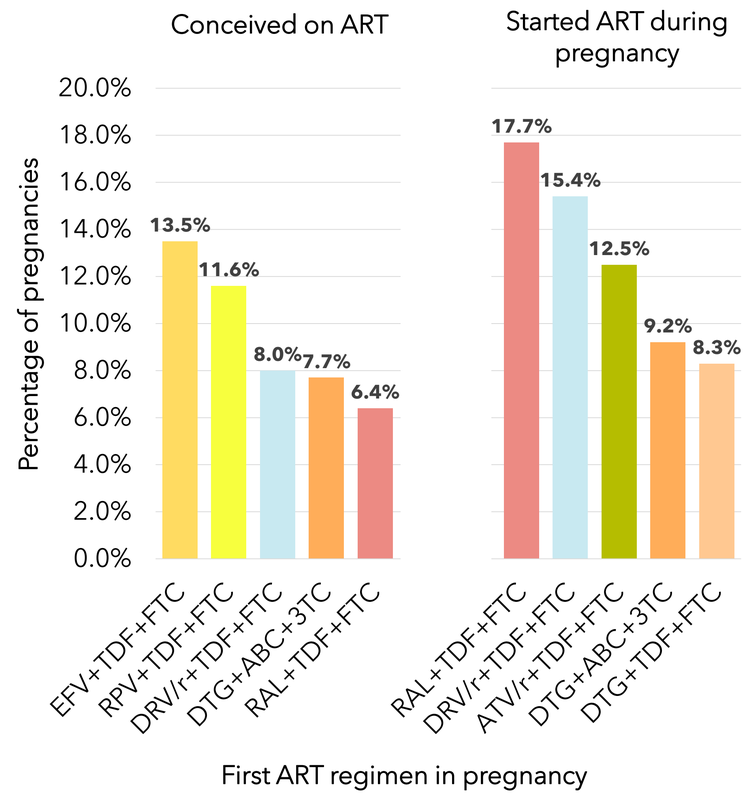
*Viral load result dated within 30 days of delivery; calculated among live births and stillbirths only (*n*=2180)

Figure 1. Common first ART regimens in pregnancy by timing of initiation, 2019-2022 (*n*=2040)



*Includes reported regimens DRV/r+TDF (*n*=27), DRV/r+TAF (*n*=12), DRV/r+3TC (*n*=10)
Note: excludes 39 pregnancies with incomplete data on ART timing/type and 357 pregnancies with first ART regimen with frequency of <10 pregnancies. Eligible regimens not shown: DRV/r+DTG+TDF+FTC (*n*=11), DRV/r+RAL+TDF+FTC (*n*=10), and TDF+FTC (no anchor reported) (*n*=12).

Figure 2. Most common first antenatal ART regimens in pregnancy



- 19.1% (413/2164) of those with live/stillbirths had their regimen modified (20.2% [355/1755] of those who conceived on ART vs 14.2% [58/409] initiated in pregnancy, *p*=0.005)
- Where the first ART regimen contained pre-conception cobicistat (*n*=165), 48 (29.1%) did not have any regimen modification; of the 117 (70.9%) with modification(s), the (first) change occurred at median 11 gestational weeks (IQR: 8-16), with 14/117 still receiving cobicistat in their second regimen

Abbreviations | 3TC: lamivudine; ABC: abacavir; ATV/c: atazanavir/cobicistat; ATV/r: atazanavir/ritonavir; BIC: bictegravir; DOR: doravirine; DRV/c: darunavir/cobicistat; DRV/r: darunavir/ritonavir; DTG: dolutegravir; EFV: efavirenz; EVG/c: elvitegravir/cobicistat; FTC: emtricitabine; IQR: interquartile range; NVP: nevirapine; RAL: raltegravir; RPV: rilpivirine; TAF: tenofovir alafenamide; TDF: tenofovir disoproxil fumarate

CONCLUSIONS

- Treatment heterogeneity reflects treatment history of those with established diagnoses, evolving BHIVA pregnancy treatment guidelines during this period, and drug availability
- Modification was frequent but may reflect varied clinical scenarios (e.g., safety concerns, treatment failure); study of impact on virological/pregnancy outcomes is needed
- Lack of/late switching of cobicistat-containing ART is not in line with BHIVA guidelines, but this may be overestimated due to under-ascertainment of drug changes in ISOSS
- ART prescribing decision-making should consider fertility potential/desires of individuals with childbearing potential

Funding and governance
ISOSS is funded by the NHS Infectious Diseases in Pregnancy Screening Programme. Patient data are collected under legal permissions granted under Regulation 3 of the Health Service (Control of Patient Information) Regulations 2002

Acknowledgements
Many thanks to everyone who reports to ISOSS, the ISOSS team, the CERP members and the IDPS team. Full list of CERP membership on: www.ucl.ac.uk/isoss
The ISOSS Annual Report is available on gov.uk

Contact
www.ucl.ac.uk/isoss
r.sconza@ucl.ac.uk
@ISOSS_UCL

ISOSS Integrated Screening Outcomes Surveillance Service

NHS