

# Experience of dolutegravir/lamivudine (DTG/3TC) and dolutegravir/rilpivirine (DTG/RPV) two drug anti-retroviral regimens in a London tertiary centre

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## Background:

Following the GEMINI and SWORD trials where sustained virological suppression was observed on dolutegravir/lamivudine (DTG/3TC) or dolutegravir/rilpivirine (DTG/RPV), many centres have begun considering these regimens for selected patients. At the Royal Free Hospital we started using these combinations in July 2015 as part of the SWORD trial, here we review our experience.

## Methods:

- Database search undertaken of all patients attending the Royal Free Hospital for HIV care between 1<sup>st</sup> January 2018 and 14<sup>th</sup> December 2018.
- All patients on two drug anti-retroviral regimens of DTG/3TC and DTG/RPV were selected for inclusion.
- Demographic data, HIV viral load, resistance data and anti-retroviral history were all analysed.

## Results:

### Two drug anti-retroviral regimens

- There were 96 patients (3% from our HIV cohort of 3290 patients) who were switched onto either DTG/3TC or DTG/RPV: 68/96 (71%) on DTG/3TC and 28/96 (29%) on DTG/RPV.

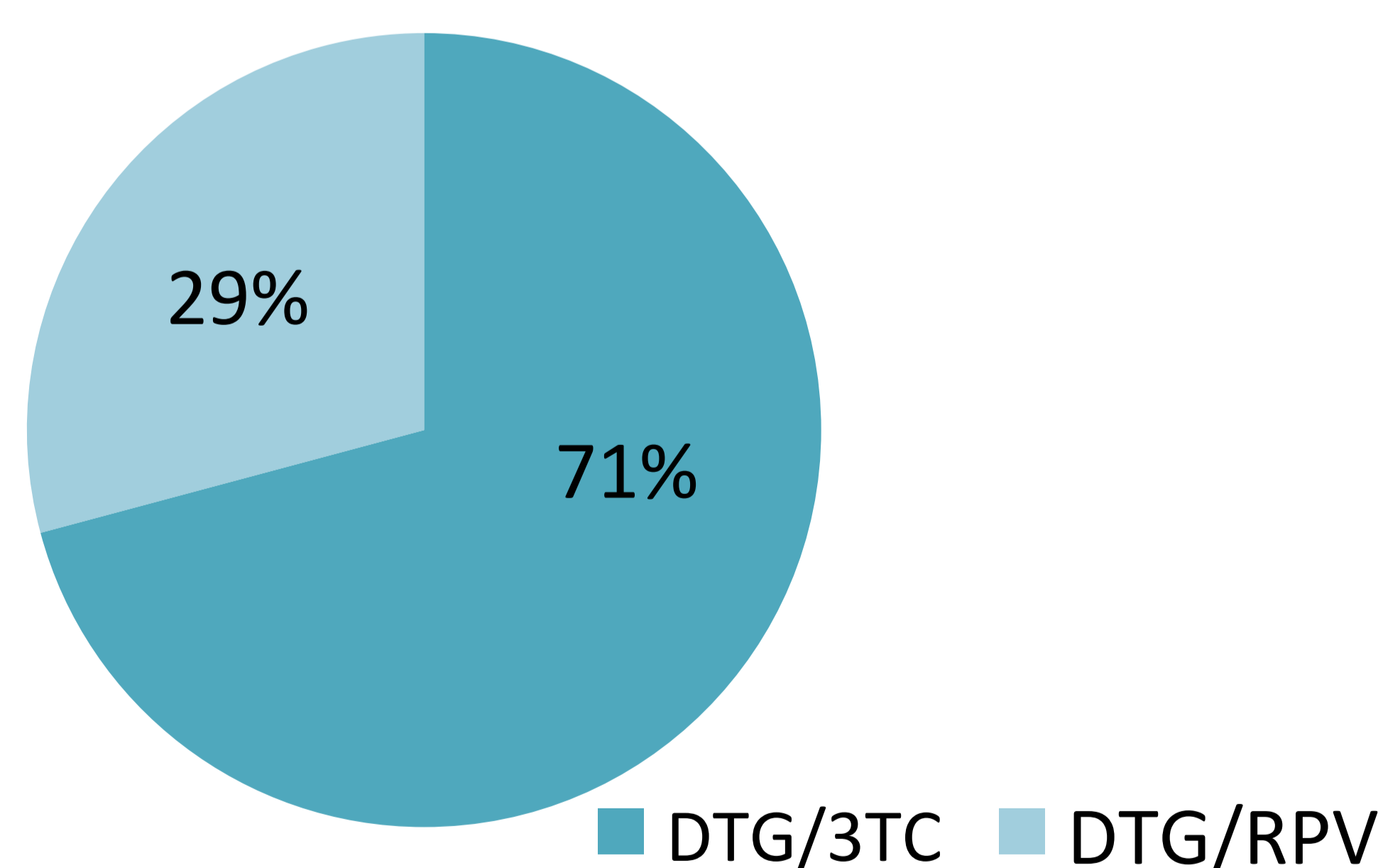


Figure 1: Patients prescribed DTG/3TC and DTG/RPV

### Patient demographics

- Median patient age was 52 (IQR 48-57 years).
- 77% (n=74/96) were male and 23% (n=22/96) female.
- Median time since diagnosis was 17 years (range 2-36 years).
- Mean person time follow up was 0.5 years.

### HIV viral load

- 98% (n=94/96) of patients had an undetectable HIV viral load (<40 copies/ml) at time of switch.
- 99% (n=95/96) achieved or maintained an undetectable HIV viral load by the end of the study period.
- Highest HIV viral load at time of switch where virological suppression achieved was 5,300 copies/ml.
- Single patient with detectable viraemia at the end of data collection stopped two drug regimen after 1 week due to DTG-related side effects.

### HIV resistance mutations

Drug class	Mutation	DTG/3TC	DTG/RPV
NRTI	M184V	0 patients	9 patients
	M41L	2	3
	T215Y	1	4
	T69N	1	0
NNRTI	K103N	2	4
PI	L90M	0	2
	I84V	0	1
	D30N	1	2

Figure 2: HIV resistance mutations

- Where resistance data available, 42% (n=40/96) had no resistance mutations.
- Patients from our cohort on DTG/RPV maintained an undetectable HIV viral load despite NNRTI mutations.
- F121Y integrase mutation observed in one patient who suppressed on Darunavir/Cobicistat/DTG from an HIV viral load of 400 copies/ml prior to DTG/RPV switch.

### Anti-retroviral history

- Patients on DTG/3TC and DTG/RPV had received a median of 3 and 4 previous regimens respectively.
- Main reasons for switch were cardiovascular disease and renal disease.

## Discussion:

The experience from our centre supports the results of the GEMINI and SWORD trials, with sustained virological suppression on two drug anti-retroviral regimens observed in almost all our patients. Failure to suppress in our cohort resulted from early cessation of therapy due to side effects. Further analysis is planned to determine additional outcome data after a longer period of follow up. Based upon our experience other patients may be suitable for switching to DTG based two drug anti-retroviral regimens.