Performance of dolutegravir based two drug regimens (DTG-2DR) in a large real-world cohort of people with HIV

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Introduction

Use of DTG-2DR has been shown to maintain virological suppression in HIV affected people. [1-3] In our centre, regimens include DTG/3TC, DTG/RPV, DTG/FTC. Multiple tablet regimens (MTR) were issued until single tablet regimens (STR) were available. Since 2015 we prescribed DTG-2DR for 620 people out of a total cohort of 3133 (19.8%).

Methods

Clinic database search 01/01/15-31/10/21 conducted for all people receiving DTG-2DR. Microsoft Excel™ spreadsheet used to compile data. Demographic, tolerability and HIV related data were analysed.

Results

Demographics

620 people were prescribed DTG-2DR. Of these, 561 had complete data for analysis. Majority of the patients were male (n=446, 79.5%, female n = 115, 20.5%). The median age was 54 (IQR 46-59). The most common risk factors for HIV infection were MSM sex (n=343, 61.1%), heterosexual sex (n=177 31.5%) and injecting drug use (n= 10, 1.2%). Median time to DTG-2DR prescription from diagnosis was 16 years. Median time on treatment was 11 and 28 months for DTG-XTC and DTG-RPV respectively.

Efficacy

537/561 (97.2%) people had an undetectable viral load (VL) at time of first prescription. 3 had missing pre-prescription VL. 21 had VL>50 copies/ml prior to initiation. Median VL was 5258 copies/ml (IQR 132, 5370). 9 people (1.6%) initiated DTG-3TC naively, and all suppressed after initiation (2 DTG/3TC MTR, 7 DTG/3TC STR. MTR would later be switched to STR). The remaining 552 switched to or continued DTG-2DR. The great majority remained suppressed at data censor (n= 546, 99.0%, chart 1). The most common regimen was DTG/3TC as STR (n=398, 72.1%, see table below).

Regimen	Number of Patients	Percentage of Patients
	(Total patients = 552)	
DTG/RPV	**74**	**13.4%**
MTR	26	4.7%
STR	48	8.7%
DTG/3TC	**460**	**83.3%**
MTR	62	11.2%
STR	398	72.1%
DTG/FTC	**18**	**3.3%**

Tolerability and Adverse Events

4 patients died (0.1%) but cause of death was not related to HIV or ART. Majority of people tolerated DTG-2DR with no issue. 70 people (12.7%) switched off DTG-2DR (57 DTG/XTC 13 DTG/RPV). 59 switched for tolerability (10.7%) and 11 (2%) for blipping or failure. Most common side-effects were neurological (n= 13, 18.6%), psychiatric (n =12 (17.1%), or weight gain (n=10, 14.3%).

Reason For Switch off DTG-2DR	Number of Patients	Percentage of Patients
Total patients = 70 (13 DTG/RPV, 57 DTG/XTC)		
Neurologic (Insomnia 8, Headache 3, Paraesthesia 1, Other 1)	13	18.6%
Psychiatric (Mood disturbance 11, Other 1)	12	17.1%
Weight Gain	10	14.3%
Failure	6	8.6%
Gastrointestinal	6	8.6%
Other reason (not documented)	5	7.1%
Blip	5	7.1%
Intolerance (type not documented)	4	5.7%
Rationalisation	2	2.9%
Rash	2	2.9%
Itch	2	2.9%
Patient Preference	2	2.9%
DDI	1	1.4%

Blips

41 episodes of blip (1 off>50 copies/ml) occurred in 30 people (5.3%). The majority of these blips occurred on DTG-XTC MTR (n=26, 63%, see chart 2). These prompted switch to alternate regimens in 5 people (DTG/RPV x1 STR, X1 MTR and DTG/3TC MTR x3); and the remainder resuppressed on continuation of the same regimen.

Chart 1: Percentage suppressed on DTG-2DR

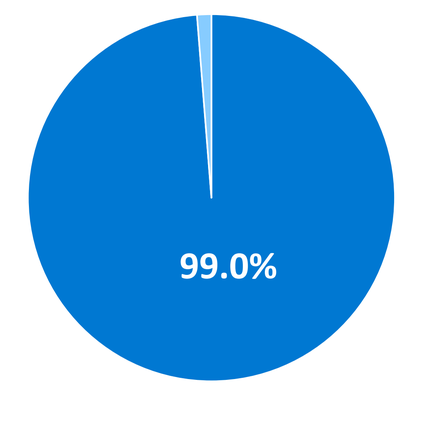
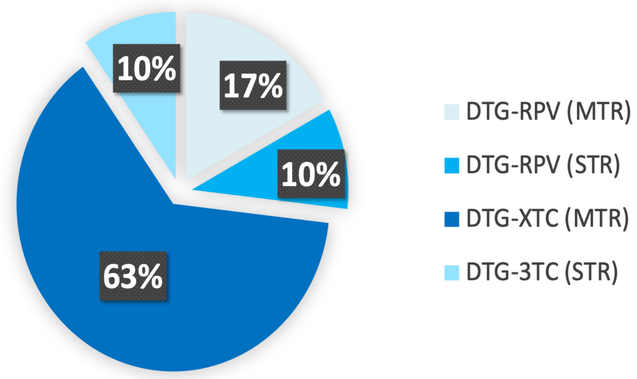


Chart 2: Blips per regimen



Failure

6 people (1.1%) encountered failure defined as VL >200 copies/ml or persistent LLV. Per regimen, 4 people failed on DTG-3TC STR, 1 on DTG-3TC MTR and 1 on DTG-RPV MTR. Four failures were at LLV only and rapidly resuppressed on regimen switch. One developed a high viral load (DTG-3TC MTR). One failure was due to non-adherence and the person switched to triple therapy.

Resistance

5 failures were investigated with resistance tests, mutations were identified in one person. He received TDF/3TC/DTG, alongside multiple cardiovascular medicines, and switched to DTG/3TC MTR due to TDF related side-effects. He suppressed initially but months later his VL was detected at >4000 copies/ml. Genotyping revealed reverse transcriptase (M184V, K103N) and integrase (T66A, G118R, E138K) mutations. He switched to TAF/FTC/DRV/c STR and resuppressed.

Discussion

TANGO, SALSA and SWORD studies have shown non-inferiority of DTG-2DR to standard triple regimens in maintaining virological suppression. [1-3]
Our data, a large cohort of 561 mostly MSM, supports these findings with 98.0% suppressed at data censor.
Side-effects noted were similar to those encountered in the literature.
It is interesting to note that the majority of viral blips occurred on MTR regimens.
There were a low number of failures, and proportionally these were more likely to occur on MTR. One episode of resistance occurred in a person receiving DTG-3TC MTR, a finding similar to GEMINI study, where failure with resistance only occurred on MTR. [4]

Conclusion

Majority of DTG/3TC use is in stable switch. A minority of patients switch due to tolerability. Low number of virologic failures noted, though one developed INI resistance; VF associated with MTR and it is imperative switch to STR occurs when available, commensurate with trial data showing no failure with resistance if DTG/3TC STR used. Overall DTG-2DR demonstrates high efficacy in a real-world setting.

References

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