

Anti-retroviral therapy modification in an acute setting

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BACKGROUND:

Common reasons for changing anti-retroviral (ART) regimens include virological failure, toxicity, co-morbidities and drug-drug interactions (DDI).

People living with HIV (PLWH) admitted to hospital may be medically complex with HIV or non-HIV related illness, worsening of a pre-existing condition, diagnosed with new conditions, and require new medications.

With increasing available options of effective ART, regimens are often amended to accommodate these factors.

This review aims to describe the reasons for changing ART in hospitalised PLWH.

RESULTS:

ART changes were made for 86 hospitalised PLWH: 33 in 2019, 28 in 2020 and 25 in 2021. 84% were admitted secondary to a non-HIV condition.

Table 1. Demographics

Variable	Summary statistic	N = 86
Sex	N (%)	21 Female (24)
Age	Mean (Years)	52.6
Ethnicity	N (%)	42 White (49) 29 Black (34) 15 Other (17)
CD4 cell count (cells/ μ L)	Median (range)	303 (6-1306)
CD4:CD8 ratio	Mean (range)	0.675 (0.06-3)
Duration of HIV (years)	Mean (range)	15.5 (0-36)
Duration of ART	Mean (Years)	11.5

13 patients passed away during their admissions: 12 non-HIV related (including 1 secondary to covid-19 infection) and 1 HIV-related.

ART modifications were made based on genotypic resistance (65%), ART history and discussion with the referring HIV clinician.

ART MODIFICATIONS:

Table 2. shows the break down of ART switches for 2019 - 2021

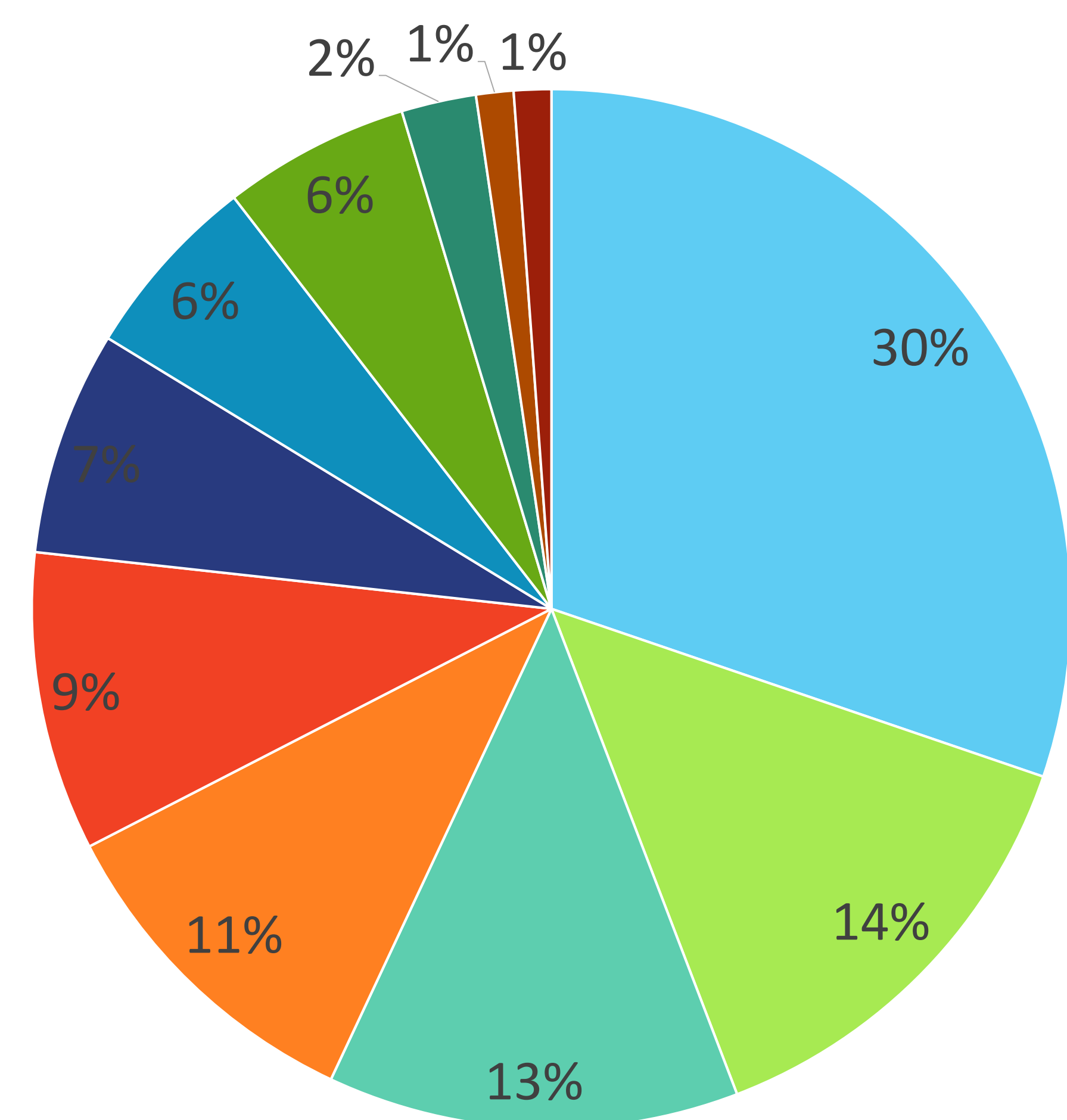
Switching FROM	Switching TO	N
NRTI	Alternative NRTI	33
	INSTI	1
	No substitute	5
NNRTI	Alternative NNRTI	1
	INSTI	9
	PI	1
	No substitute	1
PI	Alternative PI	1
	INSTI	11
	NNRTI	1
	No substitute	3
INSTI	Alternative INSTI	11
	NNRTI	1
	PI	2
Cobicistat	Ritonavir	10
Ritonavir	Cobicistat	1
Maraviroc	No substitute	1

METHOD:

A 3-year retrospective electronic note review was conducted for all PLWH admitted to a large urban hospital between January 2019 and December 2021 (including pre-covid pandemic and during).

Data were collected on all patients with modified ART including patient demographics, immune-status, ART history and reasons for switching treatment.

REASONS FOR SWITCHING:



- DDI
- Renal disease
- Impaired swallow
- Simplification
- Cardiovascular risk
- CNS side effects
- Intensification
- Not known
- Bone protection
- End of pregnancy
- Hypersensitivity reaction

34% changed to an alternative NRTI, 11.5% to an alternative INSTI, 11.5% from a PI to INSTI and 10% from cobicistat to ritonavir booster.

REASONS FOR HOSPITAL ADMISSION:

15/86 patients (17%) were admitted with HIV-related illness: 5 tuberculosis infection, 3 *pneumocystis jirovecii* pneumonia, 2 HIV-encephalopathy, 1 progressive multifocal leukoencephalopathy (PML), 1 *toxoplasmosis gondii* and tuberculosis, 1 *mycobacterium avium intracellulare*, 1 lymphoma, 1 immune thrombocytopenic purpura (ITP) secondary to HIV

CONCLUSION:

DDIs were the most common trigger for switching ART; the most frequent ART change was switching NRTI.

The majority of these patients were admitted for non-HIV related issues, highlighting the importance that all PLWH admitted to an acute setting should be reviewed by the HIV specialist team.

The mortality rate of 15% represents the level of complexity in this patient cohort.

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