

## Case

- Young male patient, who is MSM, attends routine PrEP appointment.
- Nil symptoms reported and no issues with compliance identified
- A fourth generation HIV test was weakly p24 antigen positive and antibody negative. A repeat test demonstrated a weakly positive antibody and HIV viral load was 960.
- The patient disclosed intermittent adherence to PrEP at subsequent visits.
- Genotypic testing did not demonstrate any resistance. The patient was not able to commence antiretroviral therapy (ART) immediately and returned several weeks later where his HIV antibody was still weakly positive with a HIV viral load of 417. Repeat genotypic resistance testing was negative.
- The patient was commenced on Truvada and Dolutegravir and was undetectable 4 weeks later with undetectable viral load since then.

Time	0	Week 1	Month 1	Month 2	Month 3
Viral Load	960	828	417	Not detected	Not detected
CD4	x	399	x	399	544

ART commenced

Mutation of Note	Medications	Implication
M184V/I	selected by 3TC/FTC	reduce susceptibility to these drugs >100-fold
K65R	selected by TDF, ABC and rarely 3TC	reduces TDF, ABC susceptibility ~2-fold reduces 3TC and FTC susceptibility about 5 to 10-fold

## Discussion

- HIV seroconversion has been described in the context of intermittent compliance with PrEP.
- In this case, incomplete antibody seroconversion with a low HIV viral load was suggestive of seroconversion in the presence of low levels of ART.
- HIV acquisition in this context is associated with resistance with either M184V and/or K65R resistance mutations These were not demonstrated genotypically and the patient suppressed with ART.
- This case highlights the range of factors that need to be considered when assessing possible PrEP failure including the importance of adherence and assessment of risk for HIV resistance.

### References:

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