Outline

• Pre-treatment

• On-treatment
Pre-treatment

• Basic bloods:
  - Hb
  - Creatinine
  - ALT
  - Syphilis
  - Hepatitis B
  - CD4
  - (viral load)
  - Other
Pre-treatment

• Basic bloods:
  - Hb – Measure of health (low Hb = mortality)
  - Creatinine – measure of kidney health
  - ALT – measure of liver health/function
  - Syphilis – concomitant STI
  - Hepatitis B – Co-infection important to know
  - CD4 – measure of immunity (co-trimoxazole), CrAg
  - (viral load)
  - Other
Other

- BP
- Weight
- Height
- HGT
- Urine dipstix
Cockroft-Gault

Creatinine clearance = \((140-\text{Age}) \times \text{Wt.} \times 1.04\)

plasma creatinine

Creatinine clearance = \((140-\text{Age}) \times \text{Wt.} \times 0.85\)

plasma creatinine
Creatinine clearance

- >50 = use TDF
- <50 = do not use TDF
On-treatment

• Creatinine
  Frequency depends on country guidelines
e.g. SA month 3, 6, 12 then every 12 months

• Hb if on AZT month 1,2,3 then annually
On-treatment

• Cholesterol & triglycerides 1 year then every 12 months

• CD4 – 1 year and then every 12 months

• VL – 6 months then 1 year and then every 12 months if VL <1000
On-treatment

- VL – if VL >1000, repeat in 1 month/6 weeks
- If VL still >1000, then treat as virological failure
Patient 1

• 40 year old male, HIV +, CD4 count 38, presents with chronic fatigue, decreased appetite and trouble concentrating / sleeping, weight 39kg. Creatinine 100, Urea 6

• How would you decide what regimen to put him on?
Patient 2

- Patient 36 years old. Creatinine clearance was 55 and was started on TDF/3TC/EFV. 3 months later the patient has a dipstick and there is protein.... ???

- What would be the next blood test you would like to request?
Patient continued

• Bloods were taken and the patients Creatinine clearance had dropped to 34ml/min...

• What is at the top of your differential diagnosis in this patient?
Tenofovir (TDF) induced nephrotoxicity

- According to national guidelines all patients about to be started on TDF should have their Creatinine levels measured.
  - Table 3 National Treatment Guidelines (NTG)
- Supply age and weight on lab form so that Creatinine Clearance / eGFR can be calculated.
- According to guidelines patients are not to be started on TDF if their Creatinine clearance (eGFR) is below 50.
- Use AZT, D4T or ABC as alternatives at initiation
- Creatinine and eGFR at month 3, 6, 12, and yearly after that
  - Table 10 NTG
- Urine dipstick monthly, as this is a high risk patient!
Management

• Refer to doctor if
  • Patient is on Tenofovir, and
  • eGFR drops to less than 50

Patient well
  Switch TDF to AZT (HB > 8gm/dl) or d4T

Patient unwell
  Refer to Internal Medicine at secondary level hospital
Recovery

TDF- associated nephrotoxicity fully reversible in only 42% following TDF cessation!

We need to ensure that TDF- associated nephrotoxicity is identified early

VERY important to ensure that all follow-up Creatinine levels are performed, as indicated in NTG.
OBRIGADA