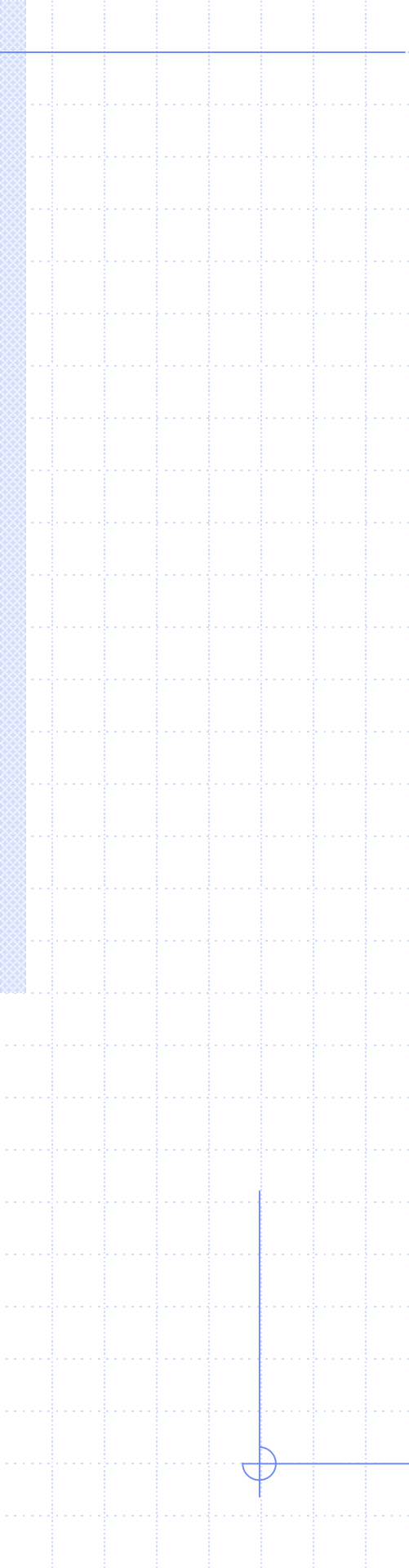


HIV / AIDS

In a Nutshell : Monitoring Antiretroviral Therapy and Side Effects



"Brevity

Dr Steve Andrews; Brooklyn
Medical Centre



..... Is the soul of lingerie”

Dorothy Parker

Dr Steve Andrews; Brooklyn
Medical Centre

Why Monitor ?

- ◆ **1. When / if to start Antiretrovirals?**
- ◆ **2. Is Antiretroviral therapy working?**
 - ◆ What constitutes failure?
 - ◆ How often / and what to test?
- ◆ **3. Is Antiretroviral therapy causing side effects ?**
 - ◆ Are side effects predictable?
 - ◆ Are side effects diagnosable?
 - ◆ Are side effects treatable?

When / if to start Antiretrovirals

◆ Surrogate Markers

- Immunological Markers
 - ◆ CD3/4/8 (CD4 < 350/200)
 - ◆ ? Total Lymphocyte Count (<1250)
- Virological Markers
 - ◆ “Viral Load” – PCR / Branch Chain / NASBA

◆ Clinical Markers

- WHO Stages
 - ◆ Pure clinical / association with CD4 / TLC

When / if to start Antiretrovirals

◆ CD4 level – “where are we now?”

- At least 2 markers (CD3/4 ?CD8)
- +/- R90 / marker
- Not possible to do without cell marking / counting technology ? (Dr Sanne)
- ? How often : 6 monthly ?
- ? Replace with TLC + clinical picture for ART purposes

When / if to start Antiretrovirals

◆ "Where are we going and how fast?"

- Different methodologies (R450 – R900) (? Boosted p24)
 - PCR (Roche Amplicor 1.5)
 - Branched Chain DNA
 - NASBA (also non plasma samples)
- Diagnostic vs Therapeutic
- Single reading inadequate due to confounding factors
- What level "undetectable"? (<5000 / <400 / <50)
- How often – initial? / 6 monthly/ yearly?
- Possible desktop / "kitchen" approach
 - Lower costs

Is Antiretroviral therapy working?

- ◆ **Immunological, clinical and virological parameters**
 - **Primary Failure - virological**
 - ◆ Failure to decline at least 1 log from VL baseline by 6-8 weeks of therapy commencement
 - ◆ Failure to decline to < 5000 copies/ml by 12 weeks of starting therapy
 - **Secondary Failure - virological**
 - ◆ Increase by 0.6 log from VL nadir on 2 separate occasions at least 2 weeks apart
 - ◆ VL increase to 50% pretreatment value

Is Antiretroviral therapy working?

◆ How often and what to test ?

- Initial Testing – at therapy commencement
 - ◆ Viral Load+/-
 - ◆ CD4
 - ◆ FBC (Hb, TLC, neutrophils) – particularly if using AZT / Hydroxyurea
 - ◆ ?LFTs (ALT)

▪ Efficacy and Safety Monitoring

- ◆ ? Initial 3 monthly VL
- ◆ 4-6 monthly thereafter
- ◆ Repeat when “unexpected” result yielded on lab testing
- ◆ Non routing testing with Clinical deterioration
- ◆ Specific testing relating to individual drug toxicity (eg AZT and FBC)

Is Antiretroviral therapy causing side effects ?

“Minor Side Effects”

Nausea

Diarrhoea

Gastric upset

Depression

Headaches

Pruritis

Broad Grouping of “Major” Side Effects

◆ Nucleoside Reverse Transcriptase Inhibitors

- Mitochondrial Toxicity
 - ◆ Pancreatitis
 - ◆ Peripheral Neuropathy
 - ◆ Lactic Acidosis

◆ Non Nucleoside Reverse Transcriptase Inhibitors

- Hypersensitivity Reactions
 - Rash
 - Hepatitis
 - Neurological Side Effects

◆ Protease Inhibitor Side Effects

- ◆ Insulin Intolerance – Diabetes Mellitus
- ◆ Lipodystrophy syndrome

**Are side effects predictable?
Are side effects diagnosable?**

Are side effects treatable?

- **1. Yes in the main – alert clinically**
 - ♦ eg hepatitis and Nevirapine / hypersensitivity with abacavir
- **2, Yes and No – alert clinically with appropriate investigations**
 - ♦ Eg lactic acidosis with NRTI – clinical picture / transaminases/ venous bicarbonate and arterial lactic acid
- **3. Yes and No – alert clinically, appropriate investigations, full armamentarium of treatment methodologies**
 - ♦ Eg PI induced lipodystrophy – clinical suspicion, change in regimens, lipid lowering agents, collagen injections

- ◆ **A need for fairly rigid protocols with individual variation between patients**
- ◆ **with broad consensus**
- ◆ **A need for a committee of experts from across the spectrum of disciplines to alter / monitor such protocols**

**“ a committee is a cul – sac down
which ideas are lured and then
quietly strangled”**

▪ Barnett Cocks