Emerging HIV drug resistance in sub-Saharan Africa

Effects on treatment outcomes

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Citation for published version (APA):

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Propositions belonging to this thesis

**Emerging HIV Drug Resistance in sub-Saharan Africa: Effects on Treatment Outcomes**

1. Roll-out of antiretroviral treatment (ART) for HIV in sub-Saharan Africa has saved millions of lives. It has also led to the emergence of and spread of HIV drug resistance, bearing public health consequences. *This Thesis*

2. Pre-treatment HIV drug resistance (PDR) is high approaching 36% in children with prevention of mother to child transmission (PMTCT) exposure. PDR significantly increases the risk of virological failure and development of acquired drug resistance (ADR) *(Chapter 3, 4 & 5)*

3. Virological failure while on non nucleoside reverse transcriptase inhibitors (NNRTI) based first-line ART is very common in children occurring in one out of every 3 children and is significantly higher in children compared with adults with reduced predicted susceptibility to the drugs on continued exposure after virologic failure. *(Chapter 6, 7, 9)*

4. High rates of etravirine and rilpivirine resistance in HIV subtype C may limit potential utility in salvage regimens *(Chapter 9)*

5. Protease Inhibitor (PI) based second-line ART is associated with low virologic failure rates and toxicity in children and adults despite advanced first-line failure with extensive nucleoside reverse transcriptase (NRTI) cross-resistance. There is no advantage of replacing them with raltegravir. *(Chapters 11, 12, 13, 14)*

6. Adolescents show very poor virologic outcomes requiring targeted interventions to optimize their HIV care *(Chapter 12)*

7. To achieve long-term HIV treatment success among children and adults in sub-Saharan Africa, there is an urgent need to adopt robust ART regimens, sustain innovative adherence strategies and include viral load monitoring in treatment programs. *This Thesis*

8. HIV, the fastest mutating organism, now poses the threat of a second drug-resistant epidemic. *(Edsel Maurice Salvana). We need the right data, right tools and right leadership to end this epidemic*

9. Challenges are what make life interesting and overcoming them is what makes life meaningful. *(Joshua J. Marine)*

10. Even reaching a very limited number of people to achieve ‘near-cure’ of HIV infection is a welcome achievement. It still seemed utopian a decade ago. *(Avelín Aghokeng)*

11. Do not go where the path may lead; go instead where there is no path and leave a trail. *(Ralph Waldo Emerson)*