Living the Dream
Triple-NRTI regimens while on TB treatment in a resource constrained setting - a paediatric cohort analysis

Gaunt TL, Minnaar J, Gaunt CB
Zithulele Hospital, Eastern Cape
When there is no Ritonavir syrup?

Drug supply is a huge issue - stock outs and short shelf half life
- If children could swallow - used tablets
- If no PMTCT exposure we used Efavirenz

Problems
- Double dose Kaletra® syrup - increase resistance risk
- Mono 3TC holding therapy - not with low CD4 or Stage 3 disease

The option was to use a triple NTRI regimen
### Background WHO guidelines

**Table 2: Recommendations for concurrent use of antiretroviral therapy and TB treatment**

<table>
<thead>
<tr>
<th>Age / weight</th>
<th>Antiretroviral therapy (ART)</th>
</tr>
</thead>
</table>
| <3yrs or <10kg | Retain or start on the following regimens  
Nucleoside Reverse Transcriptase Inhibitor (NRTI) backbone – use 2 NRTIs  
Third drug  
If on nevirapine  
• switch to lopinavir/rn  
with additional ritonavir  
mg parity with lopinavir  
• continue for 1-2 weeks  
has been stopped  
• if not possible, – cont  
dose at the upper end of  
If on lopinavir/ritonavir (Kaletra®)  
• use additional ritonavir  
• triple NRTI therapy is  
viral load <100 000 copies/ml |
| ≥3yrs and ≥10kg | Retain or start on the following regimens  
2 NRTIs as backbone  
Third drug  
If on nevirapine  
• switch to efavirenz  
• if not available continue on nevirapine  
dose at the upper end of the dosage scale  
If on lopinavir/ritonavir (Kaletra®)  
• consider switch to efavirenz, only if  
undetectable viral load⁹  
• alternatively use additional ritonavir as above  
• triple NRTI therapy is an option, if baseline  
viral load <100 000 copies/ml |

---

**If on lopinavir/ritonavir (Kaletra®)**
- use additional ritonavir as above
- triple NRTI therapy is an option, if baseline viral load <100 000 copies/ml

---

From Marais BJ et al. Paediatric Resp Rev 2011

Discussed cases and options with specialist
Study methods

- Treatment strategy didn’t preclude pharmacy and management team trying to procure Ritonavir

- 2 weeks post Rifampicin cessation, children were switched back to a PI containing regimen

- Once back on a PI containing regimen we did a viral load at 6 months

- Decided to go back and look at files over 3 years on children needing Rifampicin while on Kaletra® and analyse the outcomes
## Study results

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total children analysed while on TB Rx</td>
<td>29</td>
</tr>
<tr>
<td>Baseline ARVS</td>
<td>15</td>
</tr>
<tr>
<td>Switched from ABC-3TC-Kaletra®</td>
<td>13</td>
</tr>
<tr>
<td>Switched from 3TC mono</td>
<td>1</td>
</tr>
</tbody>
</table>
## Study results (continued)

<table>
<thead>
<tr>
<th>Description</th>
<th>Median / Mean</th>
<th>Population Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age at triple NRTI start</td>
<td>10.4 Months</td>
<td>1-76 months</td>
</tr>
<tr>
<td>Median Duration</td>
<td>6.44 months</td>
<td>0.92 - 10.1 months</td>
</tr>
<tr>
<td>Mean CD4% at start</td>
<td>20.1%</td>
<td>3 - 37%</td>
</tr>
</tbody>
</table>
**Outcomes**

- **LTFU**: 7
- **Transferred Out**: 1
- **Died**: 1
- **Virally suppressed once back on PI**: 13
- **Not suppressed**: 4
- **Recently completed triple NRTI**: 3

**Time to viral load suppression**
- 6 Months: 9
- 12 Months: 2
- 18 Months: 2

---

Zithulele Hospital      Eastern Cape Department of Health, South Africa     www.zithulele.org
Where to now?

- Keep pushing for ritonavir as PI super boosted regime is still gold standard
- Consider doing baseline viral loads before triple NRTI
- Keep analysing our data as long as Ritonivir is a stock out issue
- To be considered as an acceptable practice for future guidelines
Visit us on the web: www.zithulele.org
Follow us on Facebook: Clinical Team at Zithulele