Paediatric case study

When do we start HAART?

Too little too late!
Too much too early!

Dr Kimesh Naidoo
Principal Specialist – King Edward VIII Hospital
02/Oct/2009
8 Year old boy ST brought by granny

- History: 3 day history of cough and fever
- Vomited X 1
- In Grade 2 – off from school for 2 days

- Previous admissions: twice in past year
- With a similar problem to the current one – stayed in hospital each time for 6 days
- usually ST taken to GP – gets better > 10 times
- Live in a 3 roomed house – income obtained from granny’s pension and mum works as a cleaner in local shop
Further History

- There is 2 other family members who completed TB treatment in the past year.
- Granny is unaware of HIV status or any chronic medications the child is on.
- Mum is back at work – well – she has a 8 week old baby.
Clinical examination

- Child is in respiratory distress RR=60
- Temp = 38.7
- O2 saturations are in 2L oxygen – 97%
- off Oxygen = 86%
- Tachycardic
- Numerous hyper-pigmented skin lesions
- Heart sounds loud especially 2nd HS
- Crackles R post base
- Bronchial breathing R mid and lower zone + Dull to percussion
Further examination:

- Shorter than classmates – ok in school
- Weight just above 3\textsuperscript{rd} centile – no oedema
- Not particularly sickly
- Past 3 months – stopped playing in the street
- Generalised lymphadenopathy – not mattered
- Splenomegaly 5 cm and hepatomegaly 5 cm and does not like deep palpation of RUQ
- Clubbing present
- Mild pallor – ward HB=8
1. What is your diagnosis?
Diagnosis: Acute R consolidation on chronic Lung disease in a WHO stage 3 HIV classified child with TB contacts

2. Why does he warrant a HIV test?
Clinical WHO stage 3 influences choice of drugs – PCP needs Bactrim / influences choice/dose and duration of Antibiotics / prognosis / HAART

3. Granny refuses consent what should you do?
Phone the mother
4. After treatment with Soluble Penicillin and Gentamycin for 48hrs (over the weekend) Temp settling but still distressed - What are your concerns?

Could be wrong diagnosis
?TB
?Staph Aureus cover insufficient
?PCP/
Cardiac failure – cor pulmonale – pulm hypertension – Chronic lung – due to repeated chest infections – Bronchiectasis /

5. What is optimal management

- Sputa – induced /BAL + Blood cultures - mccs /AFB
- HIV rapid – elisa + CD4 and Viral load
- Cardiac echo – FS + EF – start antifailure treatment
- Interview Mum – PMTCT – check new baby , mom’s CD4 count+ Bactrim and TB screening
- Father and or treatment supported to be sourced
- Start adherance training
Actual course

After weekend ST discharged on Augmentin
- cardiac failure missed
- No HIV test performed – no consent
- Follow up - 2 weeks
- Mantoux Non reactive / one sputa – negative

Child taken to GP – oral meds – that evening brought back
Correct diagnosis made – anti cardiac failure treatment started
deteriorated day 4 – needed Dopamine
Echo : Cor Pulmonale poor myocardial function low FS and EF
Started on HAART day 32 in ward
Weaned of Oxygen – home for 3 weeks
Back again – intractable cardiac failure – not responding to
dobutamine and dopamine this time
Demised 9 days after this admission
Questions and points?

1. Could we have changed the course?
   No ….? YES

2. Are they conditions of end-organ damage that HAART will not alter
   - Cor Pulmonale
   - HIVAN
   - Non progressive CNS pathology
   - chronic liver

3. What public health measures could of changed the course of this case
   - Opt out screening
   - 6 week routine PCR
   - early treatment and
   - effective IMCI at GP / clinic

4. Are we missing any other issues in this case?
   - The new Baby -PCR
   - mum’s HIV status and CD4
Course

1. Mum HIV positive – her CD4 – 208
2. Mum’s CXR/sputa done on mum – okay – brought in sister for treatment supporter
3. Baby was symptomatic – axillary lymph nodes and a bad perineal rash – candida and oral candida / no CD4 done as waste of time
4. Baby to start on HAART – excluding TB
# KZN Paediatric Antiretroviral Programme

<table>
<thead>
<tr>
<th>Health District</th>
<th>Number of Children on ART March 2005</th>
<th>Number of Children on ART July 2007</th>
<th>Number of Children on ART JUNE 2009</th>
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</thead>
<tbody>
<tr>
<td>Umzinyathi(Tugela Ferry)</td>
<td>247</td>
<td>796</td>
<td>1326</td>
</tr>
<tr>
<td>Amajuba( Newcastle)</td>
<td>148</td>
<td>363</td>
<td>1198</td>
</tr>
<tr>
<td>Uthukela(Ladysmith)</td>
<td>265</td>
<td>765</td>
<td>1089</td>
</tr>
<tr>
<td>Sisonke(Kokstad)</td>
<td>106</td>
<td>325</td>
<td>934</td>
</tr>
<tr>
<td>Umgungundlovu(PMB)</td>
<td>843</td>
<td>1,871</td>
<td>3843</td>
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<tr>
<td>Umkhanyakude(Kosi Bay)</td>
<td>348</td>
<td>1,022</td>
<td>2717</td>
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<tr>
<td>Zululand(Vryheid)</td>
<td>127</td>
<td>431</td>
<td>1288</td>
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<tr>
<td>Uthungulu(Ngwelezana)</td>
<td>329</td>
<td>891</td>
<td>2515</td>
</tr>
<tr>
<td>Ugu(Port Shepstone)</td>
<td>127</td>
<td>633</td>
<td>1853</td>
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<tr>
<td>iLlembe(Stanger)</td>
<td>207</td>
<td>797</td>
<td>1914</td>
</tr>
<tr>
<td>Ethekwini-Durban</td>
<td>542</td>
<td>2,322</td>
<td>6218</td>
</tr>
<tr>
<td><strong>Province Total</strong></td>
<td><strong>3 322</strong></td>
<td><strong>10 216</strong></td>
<td><strong>24 895</strong></td>
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</table>
# Paediatric ART Totals 2008 - 2009

<table>
<thead>
<tr>
<th>Month</th>
<th>Total Children</th>
<th>Total Adult and Children</th>
<th>% Children</th>
<th>Monthly increase</th>
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<tbody>
<tr>
<td>June 2008</td>
<td>14 710</td>
<td>154 611</td>
<td>9,5</td>
<td>655</td>
</tr>
<tr>
<td>June 2009</td>
<td>24 895</td>
<td>260 421</td>
<td>9.55</td>
<td>848</td>
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</table>
## CD4 Counts

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL</th>
<th>Average per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>Data not available</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>170 114</td>
<td>14 176</td>
</tr>
<tr>
<td>2006</td>
<td>329 787</td>
<td>27 482</td>
</tr>
<tr>
<td>2007</td>
<td>309 643</td>
<td>38 705</td>
</tr>
<tr>
<td>(to September)</td>
<td>(Jan07 data missing)</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>644 834</td>
<td>53 736</td>
</tr>
<tr>
<td>( &gt; 1000 000)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Raveen Parboosing, Virology KZN NHLS (2007)
### Viral Loads

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL</th>
<th>Average per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>4 827</td>
<td>402</td>
</tr>
<tr>
<td>2005</td>
<td>32 909</td>
<td>2 742</td>
</tr>
<tr>
<td>2006</td>
<td>85 103</td>
<td>7 091</td>
</tr>
<tr>
<td>2007 (to September)</td>
<td>109 193</td>
<td>12 132</td>
</tr>
<tr>
<td>2008</td>
<td>229 037</td>
<td><strong>19 086</strong></td>
</tr>
</tbody>
</table>

Raveen Parboosing, Virology KZN NHLS (2007)
HAART for Kids in KZN- issues to deal with sustainability

1. Are we getting our money’s worth – starting kids too late (opportunity cost – where do we concentrate scarce resources)

2. Should we target mothers first – make it a requirement

3. Health seeking behaviour – role of the primary General/Family practitioner
Majority of HIV infected individuals are categorized as WHO stage 4.
Concerns on stage at which treatment started

1. Clinical stage 3 and 4 – could be late to ensure best outcome
2. Adolescent and early adult burden of disease
3. Need for exclusion criteria

4. End – organ damage:
   - Cor Pulmonale
   - Hepatitis – Liver disease
   - Non –progressive Encephalopathy
   - Some HIVAN
   - Some Cardiomyopathy
“Overall, U2CMR substantially declined in our area from 2001 and this is despite a continued high HIV prevalence and incidence in the area,”

On the basis of the multivariate analysis, much of the effect was due to maternal access to ART.

To save a life of an HIV positive child put the mother on HAART first
Health Seeking Behavior in Northern KwaZulu-Natal

Anne Case
Princeton University and Visiting Scientist, Africa Centre for Health and Population Studies

Alicia Menendez
University of Chicago and Visiting Scientist, Africa Centre for Health and Population Studies

Cally Ardington
University of Cape Town and Visiting Scientist, Africa Centre for Health and Population Studies

Type of Treatment Chosen

- Public Doctor/Clinic
- Private Doctor/Clinic
- Traditional healer
- Non-Prescribed treatment

By Age

Fraction receiving treatment

Spending by Treatment Type (Rands)

- Private Doctor/Clinic
- Traditional healer
- Public Doctor/Clinic
- Non-Prescribed treatment

By Age

Rands