Treatment outcomes among adolescents on ART in Machakos County, Kenya

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3rd International workshop on HIV and adolescents
3rd October 2019
Movenpick Hotel, Westlands, Nairobi.
Introduction

• 2017 global estimates¹:
  • 36.9 million people living with HIV/AIDS (PLHIV)
  • 1.8 million were adolescents (5%)

• 2017 Kenya estimates²:
  • 1.5 million PLHIV
  • 105,000 were adolescents (7%)
    • 8,200 new infections and
    • 2,100 deaths annually.

• Adolescents have poorer antiretroviral therapy (ART) outcomes compared to adults³⁻⁵.

• This study was to determine the treatment outcomes of adolescents on ART in Machakos County.

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Methods

• Retrospective cohort study: June-October 2018:
  • Adolescents enrolled in care 2014-2016 were randomly selected from nine facilities:
    • One county referral hospital
    • Six sub-county hospitals
    • Two health centers

• Data abstraction from patient files for routinely collected information.

• Retained adolescents were interviewed for additional psychosocial and behavioral information

Data analysis:
Descriptive analysis were used for central tendency while univariate and multivariate analysis were performed using SPSS version 16

Primary outcomes
• Retention
• Viral suppression
• Mortality

Secondary outcomes
• Loss-to-follow-up
• Defaulting
• Transfer-out
• Treatment interruption
• Treatment failure
## Baseline sociodemographic characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender (n=182)</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Male 80 (44%)</td>
</tr>
<tr>
<td>Female</td>
<td>Female 102 (56%)</td>
</tr>
<tr>
<td><strong>Age (n=182)</strong></td>
<td></td>
</tr>
<tr>
<td>Young adolescents</td>
<td>Young adolescents 54 (30%), mean age of 13.2 years</td>
</tr>
<tr>
<td>Older adolescents</td>
<td>Older adolescents 128 (70%), mean age of 18.8 years</td>
</tr>
<tr>
<td><strong>Education (n=70)</strong></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>Primary 54%</td>
</tr>
<tr>
<td>Secondary</td>
<td>Secondary 40%</td>
</tr>
<tr>
<td>Tertiary</td>
<td>Tertiary 6%</td>
</tr>
<tr>
<td><strong>Type of school</strong></td>
<td></td>
</tr>
<tr>
<td>Day</td>
<td>Day 60%</td>
</tr>
<tr>
<td>Boarding</td>
<td>Boarding 40%</td>
</tr>
<tr>
<td><strong>Disclosure in school</strong></td>
<td>Disclosure in school 35%</td>
</tr>
<tr>
<td><strong>Marital status (n=178)</strong></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>Single 91%</td>
</tr>
<tr>
<td>Married</td>
<td>Married 9%</td>
</tr>
</tbody>
</table>
Baseline Biological characteristics

- The mean baseline BMI was 17.3
- The mean baseline CD was 371 cells/ml
- TB prior to or at enrollment: 7%
- Opportunistic infection prior to or at enrollment: 8%

Almost 3 in 4 adolescents were enrolled while still stable
Clinical follow-up

- Almost all, 180 (99%) the adolescent had their weight and height documented.

- At the last visit:
  - TB screening: 164 (90%)
  - STI screening: 116 (64%)

- Prophylaxis:
  - Cotrimoxazole: 181 (99%)
  - Isoniazid: 136 (75%)
Treatment outcomes

Primary outcomes

• Retention:
  • median follow-up period of 34.7 months: 119 (65%) adolescents were retained.

• Viral suppression
  • mean follow-up period of 15 months: 73%,
  • mean follow-up period of 25 months: 71%,
  • mean follow-up period of 38 months: 52%,

• Mortality:
  • median follow-up period of median 19.1 months: 9 (5%)
  • The calculated mortality rate was 2.1 per 100 patient years.

Secondary outcomes

• LTFU:
  • 30 (17%)

• Transferred out:
  • 19 (10%)

• Defaulters:
  • five (3%)

• Treatment interruption:
  • 37 (20%)

• Treatment failure:
  • 12 (7%) (switched to second line)

Older adolescents had poorer outcomes compared to younger adolescent
Viral suppression

- Viral suppression was higher in those with a support group than those without 74% vs 70%.

- Adherence to treatment:
  - Good: 69%
  - Fair: 11%
  - Poor: 20%

- Viral suppression was also associated with adherence:
  - Viral suppression in those with good adherence was at 84%
  - Fair adherence: 60%
  - Poor adherence: 48%.
    - Those with poor adherence were almost five times more likely to be non-suppressed (Odds Ratio 4.78, 95% CI: 1.9-11.9; P=0.0008) while those with fair adherence were almost three times more likely to be non-suppressed (Odds Ratio 2.96, 95% CI: 0.93-9.38, P=0.064).
Conclusion

- We found good clinical follow-up but suboptimal treatment outcomes.
- Of critical importance is viral suppression (71-73% in 1-2 years) against the target of 90% in the 90:90:90 UNAIDS global goals to be achieved by the year 2020\(^6\).
- The drop of viral suppression over time calls for sustained and tailored interventions for adolescents.
- The National Adolescents and Reproductive Health Policy, (MoH, 2015) recommendations including provision of adolescent-friendly services\(^7\) should be implemented.

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Acknowledgements

• The adolescents who participated in the study
• Coauthors who supported in the design and implementation of the study
• The research assistants and data entry clerks (Lazarus Rapando, Caleb Kiptoo, Juma Wasike and Margaret Ndisha)
• Machakos County AIDS and STI Coordinator (Nicholas Muinde) and the Sub-county coordinators
• Facility staff and leadership

The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the author’s affiliated organizations.
Success is not final, failure is not fatal: it is the COURAGE to CONTINUE that counts.

Winston S. Churchill

Thank you