Background

• HIV and AIDS - one of the most profound public health concerns in the world
• By end of 2011:
  - estimated 34 million adults and children living with HIV
  - 69% living in Sub-Saharan Africa
• Kenyan situation:
  - KDHS 2009 HIV prevalence in 15-49 age group – 6.4%
  - By end of 2012, there were over 600,000 Kenyan adults on ART
• Antiretroviral therapy (ART):
  - decreases morbidity and mortality
  - reduces risk of transmission of HIV
  - must be taken consistently for it to be effective
• ART failure:
  - occurs when there is continued viral replication despite being on antiretroviral drugs
  - main cause is non-adherence to ART

Objective

• Determine the socio-demographic and behavioral factors of ART failure

Study site

• Rift Valley Provincial General Hospital; a level 5 semi-urban referral health facility
• Comprehensive Care Clinic (CCC) – HIV outpatient clinic; manages average 90 – 120 patients daily

Data collection and analysis

• Study design: Case control study
• Study Population: CCC enrolled adults aged >18 years on ART for 6 months or more
• Definition of case and control patients:
  - Case patient: recruited if they had a decline in CD4 count (below baseline or 30% from highest value since ART initiation) or unimproved CD4 counts from baseline or a World Health Organization (WHO) stage 3 or 4 opportunistic “illness”
  - Control patient: absence of aforementioned signs
• Study sample: 156
• Study sample recruitment: For every case-patient enrolled, sequential sampling used to enroll two control-patients
• Measurement:
  - Patient interviews - demographic, behavioural and social support variables
  - Medical chart reviews – CD4 at ART initiation and subsequent CD4 counts

Analysis: Epi Info version 3.5.1 and Stata software

Results

• 52 case-patients and 104 control-patients were enrolled
• 62% (n = 97) were female,
• 46% (n = 71) were in age group 35-44 years,
• 58% (n = 90) were currently married
• 55% (n = 86) were in irregular employment

Table 1: Bivariate and Multivariate Analysis of Socio-demographic and Behavioural Factors of ART Failure, Rift Valley PGH, Kenya, 2012

<table>
<thead>
<tr>
<th>Characteristic/Exposure</th>
<th>Total # (%)</th>
<th>Cases # (%)</th>
<th>Controls # (%)</th>
<th>Bivariate Analysis</th>
<th>Multivariate Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discontinued ART ≥ 2 weeks</td>
<td>19(12)</td>
<td>14(27)</td>
<td>5(5)</td>
<td>7.2 (2.4-21.7) &lt;0.001</td>
<td>6.9 (1.3-35.4) 0.027</td>
</tr>
<tr>
<td>Alcohol consumption while on ART (past three months)</td>
<td>14 (9)</td>
<td>09 (17)</td>
<td>05 (5)</td>
<td>4.1(1.2-16.5) 0.010</td>
<td>7.2(1.1-45.5) 0.036</td>
</tr>
<tr>
<td>Use of substances other than alcohol while on ART</td>
<td>11(7)</td>
<td>08 (15)</td>
<td>03 (3)</td>
<td>6.1(1.4-37) 0.007</td>
<td>Not Significant</td>
</tr>
<tr>
<td>CD4 count at start of ART ≤ 150 cells/mm³</td>
<td>72(54)</td>
<td>28(67)</td>
<td>44(48)</td>
<td>2.1(1.0-4.7) 0.070</td>
<td></td>
</tr>
<tr>
<td>Male gender</td>
<td>59 (38)</td>
<td>25 (48)</td>
<td>34 (33)</td>
<td>1.9(1.0-3.8) 0.090</td>
<td></td>
</tr>
<tr>
<td>Belongs to a support group</td>
<td>16 (10)</td>
<td>08 (16)</td>
<td>08 (8)</td>
<td>2.3(0.8-6.4) 0.200</td>
<td></td>
</tr>
<tr>
<td>Non-disclosure of HIV status</td>
<td>29(19)</td>
<td>07(13)</td>
<td>22(21)</td>
<td>1.7(0.7-4.3) 0.300</td>
<td></td>
</tr>
<tr>
<td>Discontinued ART for &lt; 2 weeks</td>
<td>15(10)</td>
<td>04(8)</td>
<td>11(10)</td>
<td>0.9(0.2-3.5) 0.600</td>
<td></td>
</tr>
<tr>
<td>Have a treatment supporter</td>
<td>83 (53)</td>
<td>26 (50)</td>
<td>57 (55)</td>
<td>0.8(0.4-1.6) 0.700</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Results of Complex Interaction Terms Analysis of Discontinued ART and Gender

<table>
<thead>
<tr>
<th>Complex Interaction Terms</th>
<th>Cases # (%)</th>
<th>Controls # (%)</th>
<th>AOR (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male and discontinued ART &lt; 2 weeks</td>
<td>20(80)</td>
<td>30(88)</td>
<td>Referent Referent</td>
</tr>
<tr>
<td>Male and discontinued ART ≥ 2 weeks</td>
<td>5(20)</td>
<td>4(12)</td>
<td>1.49 0.34-6.61</td>
</tr>
<tr>
<td>Female and discontinued ART &lt; 2 weeks</td>
<td>18(67)</td>
<td>69(99)</td>
<td>0.41 0.19-0.89</td>
</tr>
<tr>
<td>Female and discontinued ART ≥ 2 weeks</td>
<td>9(33)</td>
<td>1(1)</td>
<td>12.97 1.50-111.75</td>
</tr>
</tbody>
</table>

Commonest reasons for not taking ART were: Forgetting and non-acceptance of HIV status

Conclusions

• Patients on ART were more likely to fall if they had a current history of alcohol use or had discontinued ART
• Differences in level of risk as regards discontinued ART were noted based on sex
• Participating in a support group, having a treatment supporter and history of having disclosed one’s status to someone was found to have no statistically significant effect on ART failure

Recommendations

• Service providers should actively assess patients so as to identify changed or new social and behavioural (including current use of alcohol) factors and offer the appropriate psychosocial support
• Proven gender sensitive strategies should be offered during adherence and psychosocial support counselling
• Implementation of social support to people living with HIV requires clear guidance to service providers

Acknowledgments

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