Management guidelines for HIV-related Co-morbidities Result in Increased Screening but no change in Primary Prevention Implementation

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Disclosures

• No authors have any significant conflicts of interest relevant to this work

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Background

• Serious non-AIDS events are of increasing importance in the modern antiretroviral era

The changing demographic of HIV infection

“Multi-morbidity” will be increasingly common

Decreasing rates of AMI over time in HIV+ patients
Aims

• Audit compliance with national guidelines for the screening and management of cardiovascular risk at a tertiary referral centre for HIV care

• Determine if simplified clinical management guidelines and education strategies could improve screening and management in HIV positive individuals

Timeline of study

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 2013</td>
<td>Pre-Intervention Audit</td>
</tr>
<tr>
<td>Apr 2013</td>
<td>Development of HIV specific guidelines for the management co-morbidities</td>
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<tr>
<td>Apr 2014</td>
<td>Release of Guidelines and Education Sessions</td>
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<tr>
<td>Apr 2014</td>
<td>Post-Intervention Audit</td>
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</tbody>
</table>

HIV Service Guidelines

Screening and Management of HIV related Co-Morbidities

- Cholesterol
- Hypertension
- Diabetes
- Kidney Injury
- Bone Health

Development of clinical guidelines

• Writing panel included:
  - HIV physicians
  - Cardiologist
  - Endocrinologist
  - Renal Physician
  - General medical Physician
  - HIV Specialist Dietitian
  - HIV specialist Pharmacist

• Release coincided with weekly brief education sessions for ID physicians

• Guidelines available in electronic and hard copy format in the clinic consulting rooms

Details of Audit completion

• Two unique groups of 100 consecutive HIV positive outpatients who attend the Department of Infectious diseases at the Alfred Hospital for routine HIV care were compared

• Data was collected retrospectively from the electronic medical record and pathology systems

• Results that had been recorded in the 24 months prior to the date of audit were included

• The most recent result was kept in those who had multiple recordings over that period
Definition: Recommended Statin Therapy

- The National Vascular Disease Prevention Alliance (NVDPA); www.cvdcheck.org.au
- Any patient (regardless of cholesterol) with:
  - Coronary artery disease
  - Peripheral vascular disease
  - Stroke
  - Chronic kidney impairment (eGFR < 45ml/min)
  - Absolute risk score > 15%
  - Diabetes if > 60 years old
  - Total cholesterol > 7.5 mmol/L
  - Persistent hypertension (SBP ≥ 180 mmHg)

Definition: Recommended Statin Therapy

- Any patient with risk score 10 -15% AND:
  - Family history of coronary artery disease in 1st degree relative
  - Persistent hypertension ≥ 160mmHg
  - Aboriginal descent

Inadequate statin therapy

- Patient currently receiving statin therapy and total cholesterol >4.0 mmol/L, or
- Patient inappropriately not on a statin

Statistical Methods

- Results were summarized by group using Fisher’s exact or chi-squared tests as appropriate
- Mann Whitney U test for continuous data
- Continuous variables described as medians and interquartile ranges
- All statistical analyses performed on Stata 11.0/IC (College Station, Texas)
- The project was approved by the Alfred Ethics committee (Project Number 167-13)

Participant Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Pre Intervention</th>
<th>Post Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Male</td>
<td>93 (93%)</td>
<td>88 (88%)</td>
</tr>
<tr>
<td>Age, years</td>
<td>49 (38 - 53)</td>
<td>49 (41 - 57)</td>
</tr>
<tr>
<td>Smoking status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never smoked</td>
<td>24 (24%)</td>
<td>21 (21%)</td>
</tr>
<tr>
<td>Ex-Smoker</td>
<td>5 (5%)</td>
<td>9 (9%)</td>
</tr>
<tr>
<td>Current Smoker</td>
<td>38 (38%)</td>
<td>37 (37%)</td>
</tr>
<tr>
<td>Not documented</td>
<td>33 (33%)</td>
<td>10 (10%)</td>
</tr>
<tr>
<td>Diabetes status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-diabetic</td>
<td>58 (58%)</td>
<td>74 (74%)</td>
</tr>
<tr>
<td>Diabetic</td>
<td>6 (6%)</td>
<td>12 (12%)</td>
</tr>
<tr>
<td>Not screened</td>
<td>36 (36%)</td>
<td>10 (10%)</td>
</tr>
<tr>
<td>History of CVD</td>
<td>7 (7%)</td>
<td>8 (8%)</td>
</tr>
<tr>
<td>Framingham Risk score, %</td>
<td>10 (6.5 - 13)</td>
<td>8 (5 - 13)</td>
</tr>
<tr>
<td>eGFR, ml/min</td>
<td>85 (72 - 90)</td>
<td>86 (72 - 90)</td>
</tr>
<tr>
<td>Blood pressure recorded</td>
<td>67 (50%)</td>
<td>69 (50%)</td>
</tr>
<tr>
<td>Systolic BP, mmHg</td>
<td>134 (120 - 152)</td>
<td>132 (120 - 130)</td>
</tr>
</tbody>
</table>

Cholesterol

- 81% pre and 83% post-intervention had fasting cholesterol levels available (p = 0.713)

Compliance with guidelines for statin use

- p value = 0.64
Adequacy of Statin Therapy

- 24% Pre-Intervention
- 30% Post-intervention

Management of Hypertension

- 23 participants pre-intervention and 17 post intervention were receiving an antihypertensive

Mean Systolic Blood Pressure

- p value = 0.740

High proportion of patients with borderline renal function as estimated by eGFR

Limitations

- Small sample size
- Retrospective design
- Homogeneous patient population

- Potentially not long enough between intervention and post-audit for lipid or blood pressure changes to take effect

- Equally the durability of improved attention to screening for cardiovascular risk factors post intervention is not known

Conclusions

- Improvements in screening for cardiovascular risk factors can be achieved with education tools

- These alone are not sufficient to improve the implementation or optimisation of primary preventative therapies

- Changes to the model of HIV care provision may be what’s needed
Acknowledgements

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