Comparison of Qrisk 2 and DAD cardiovascular risk scores in HIV positive patients with an identified ten year Framingham risk of ≥10%

18th Annual Conference of the British HIV Association, 18th-20th April, Birmingham

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BACKGROUND
Cardiovascular risk reduction is now an important element of care for those with HIV. Interventions such as statins are recommended for those with a risk of >20% and recent local guidance recommended against the use of Abacavir as a first line agent in those with >10% risk. Three risk calculators: Framingham, Qrisk2 and DAD (Data Collection on Adverse Effects of Anti-HIV Drugs) are commonly used. We used data from a cohort with a ten year Framingham cardiovascular risk of ≥10% to compare the three calculators. Our clinic currently uses the Framingham equation to calculate risk as it is the easiest to use, but a telephone survey of local HIV clinics showed that several other clinics use Qrisk2 or the DAD risk equations.

METHODS
• The HIV nursing team systematically collected data on cardiovascular risk factors, including the Framingham risk equation for all patients attending the clinic in 2010 and 2011.
• Five year cardiovascular risk was calculated using the DAD risk equation and 10 year risk was calculated using Qrisk2 for all those with a 10 year Framingham risk of ≥10%.

ELIGIBILITY AND DEMOGRAPHICS
• We assessed 1153 eligible patients.
  • Young people attending the transition HIV clinic, pregnant women, and those who had given birth within the past 3 months were excluded.
  • Out of a cohort of 1153 patients, 195 (16.9%) had a Framingham risk of ≥10%.
  • 181/195 (92.8%) were male and 113 (57.9%) were White British. Median age was 69.5.

RESULTS
Amongst patients with a Framingham risk of ≥10%:
• Median systolic blood pressure: 145.5mmHg.
• Median total cholesterol/HD ratio: 4.1.
• Antithromboplastic treatment: 28 patients (14.4%)
• Diabetes mellitus: 25 patients (12.8%)
• Family history of ischemic heart disease: 58 patients (29.7%)
• Current smoker: 66 patients (33.8%)
• Chronic renal impairment: 10 patients (5.1%)
• Rheumatoid arthritis: 5 patients (2.6%)
• 124/195 (63.6%) had a 10 year Qrisk2 score ≥10%
• 23/195 (11.8%) had a 5 year DAD risk score ≥10%

Table showing results:

<table>
<thead>
<tr>
<th></th>
<th>Framingham 10 year risk</th>
<th>QRisk2 10 year risk</th>
<th>DAD 5 year risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients with a risk of ≥20.0%</td>
<td>25 (12.8%)</td>
<td>41 (21.0%)</td>
<td>4 (2.1%)</td>
</tr>
<tr>
<td>Number of patients with a risk of 10.0% - 19.9%</td>
<td>170 (87.2%)</td>
<td>83 (42.6%)</td>
<td>19 (9.7%)</td>
</tr>
<tr>
<td>Number of patients with a risk of 5.0% - 9.9%</td>
<td>0</td>
<td>50 (25.6%)</td>
<td>66 (33.8%)</td>
</tr>
<tr>
<td>Number of patients with a risk of &lt; 5.0%</td>
<td>0</td>
<td>21 (10.8%)</td>
<td>106 (54.4%)</td>
</tr>
</tbody>
</table>

CONCLUSION
• The ten year Qrisk 2 and five year DAD cardiovascular risk scores varied in HIV positive patients with a ten year Framingham risk of ≥10%.
• Variability of results from the different calculations may lead to patients who would be considered to be at high cardiovascular risk in one clinic being considered low risk at another.
• This could lead to variability in the strategies used in reducing risk as well as decisions as to potential choice of antiretroviral treatment.
• It is suggested that consensus is obtained on which risk calculation tool is used in HIV patients within our sector.
• This will ensure consistency and equity of management of risk, and choice of antiretroviral agents.

References:
3. BHIVA guidelines for the routine investigation and monitoring of adult HIV-1 infected individuals (2011).

Acknowledgements: Gilead for funding a nursing post, Dr Katia Prime and Prof. Caroline Sabin for advice on study design and analysis.