Examining the gap between evidence-based guidelines and clinical practice in lipid modification in adults at high risk of cardiovascular disease mortality: evidence from an Irish cohort

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Introduction

The role of statins in the secondary prevention of cardiovascular disease (CVD) is well established. Statin therapy is also recommended as part of the management strategy for diabetics. In asymptomatic individuals, statins are recommended if their Systematic Coronary Risk Estimation (SCORE) of 10 year CVD mortality is high (≥5% and ≤10%) or very high (≥10%) and Low-Density Lipoprotein (LDL-C) levels are above defined intervention thresholds.

Aim and Objectives

To examine the extent to which clinical practice in statin prescribing adheres to clinical guidelines in those with cardiovascular disease (CVD) or diabetes mellitus (DM) without CVD.

Method

- Cross-sectional study
- Irish Longitudinal Study on Ageing (Wave 1)
- Home based interview and health assessment
- Data collection 2009-2011
- Representative sample of community living older adults in Ireland aged 50 years and older
- Analysis limited to those aged 50-64 years
- Self-report of CVD (angina, myocardial infarction, bypass surgery, angioplasty or stent, stroke or transient ischaemic attack) and diabetes based on ever having a doctor’s diagnosis
- CVD risk in those without CVD or diabetes was calculated using the SCORE ‘low risk’ country equations

Almost 5% (n=167) had established CVD and 4.1% (n=141) had diabetes without CVD (Figure 1).

SCORE risk was estimated in those without established CVD or diabetes (n=3077). 40.8% were at low risk, 54.3% at moderate risk, 4.1% at high risk and 0.6% at very high risk of 10 year CVD mortality. In total almost 5% (n=147) were classified at high or very high risk for CVD mortality, this was higher in males compared to females (9.6% vs 1.0%) (Figure 2).

Results

The response rate to the TILD A survey as a whole was 62%. In those aged 50-64 years the mean age was 56.7 years and 45% were male (Table 1).

Table 1: Characteristics of the sample 50-64 years (n=2059)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>Male</th>
<th>Female</th>
<th>Total (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr)</td>
<td>56.9 (4.3)</td>
<td>58.1 (4.2)</td>
<td>56.6 (4.2)</td>
<td>56.7 (4.2)</td>
</tr>
<tr>
<td>Sex %</td>
<td>45.1</td>
<td>45.1</td>
<td>46.6</td>
<td>45.6</td>
</tr>
<tr>
<td>Current smoker %</td>
<td>16.5</td>
<td>16.5</td>
<td>16.5</td>
<td>16.5</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>6.3 (0.5)</td>
<td>6.3 (0.5)</td>
<td>6.3 (0.5)</td>
<td>6.3 (0.5)</td>
</tr>
<tr>
<td>LDL-C (mmol/l)</td>
<td>2.9 (0.6)</td>
<td>2.9 (0.6)</td>
<td>2.9 (0.6)</td>
<td>2.9 (0.6)</td>
</tr>
<tr>
<td>HDL-C (mmol/l)</td>
<td>1.3 (0.3)</td>
<td>1.7 (0.4)</td>
<td>1.5 (0.4)</td>
<td>1.5 (0.4)</td>
</tr>
<tr>
<td>Systolic BP (mmHg)</td>
<td>127.6 (17.9)</td>
<td>131.9 (18.3)</td>
<td>127.6 (17.9)</td>
<td>131.9 (18.3)</td>
</tr>
<tr>
<td>Diastolic BP (mmHg)</td>
<td>83.2 (11.0)</td>
<td>83.2 (11.0)</td>
<td>82.6 (10.5)</td>
<td>83.2 (11.0)</td>
</tr>
</tbody>
</table>

In those with established CVD 68.8% (95% CI 61.7-75.9%) were taking statins (Figure 3). In diabetics without clinical evidence of CVD only 57.4% (95% CI 49.1-65.7%) are on statins and in those whose SCORE risk was high or very high (5%) only 19% (95% CI 12.6-25.4%) were found to be taking statins.

Conclusion

Despite strong evidence and clinical guidelines recommending the use of statins in those with clinical evidence of CVD, a large gap exists between guidelines and clinical practice in Ireland in this cohort, with only 68.8% taking statins. In those with diabetes but no CVD statin utilisation is lower than expected.

Further research is required to examine the future health and cost implications of under-treatment in this cohort and to identify health system processes which would facilitate implementation of the guidelines. Barriers to full implementation of the guidelines need to be examined and proactive policies pursued to achieve higher levels of guideline implementation for both primary and secondary CVD prevention.

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References


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Conflict of Interest: None

Figure 2: SCORE 10 year risk of CVD mortality by sex in those without CVD or Diabetes

Graphical representation showing the distribution of SCORE risk by sex in those without CVD or Diabetes.

Figure 3: High risk groups by statin and total lipid modification therapy

Graph showing the proportion of high risk groups by statin and total lipid modification therapy.