Atorvastatin reduced major cardiovascular disease events in type 2 diabetes mellitus


Clinical impact ratings GP/FP/Primary care **** IM/Ambulatory care **** Endocrine ****

Cardiology

In patients with type 2 diabetes mellitus, is atorvastatin better than placebo for primary prevention of major cardiovascular disease (CVD) events?

**METHODS**

- **Design:** randomised placebo controlled trial (Collaborative Atorvastatin Diabetes Study [CARDS]).
- **Allocation:** concealed.
- **Blinding:** blinded (clinicians, patients, pharmacists, data collectors, outcome assessors, monitoring committee, and data analysts).*
- **Follow-up period:** median 3.9 years.
- **Setting:** 132 clinical centres in the UK and Ireland.

**Patients:** 2838 patients 40–75 years of age (mean age 62 y, 68% men) with type 2 diabetes mellitus (met 1985 World Health Organization criteria) who had ≥1 of the following: a history of hypertension, retinopathy, microalbuminuria or macroalbuminuria, or a current smoking habit. Exclusion criteria included a history of CVD, plasma creatinine >150 μmol/l (1.7 mg/dl), glycated haemoglobin >12%, and <80% compliance with placebo during the baseline phase.

**Intervention:** atorvastatin, 10 mg daily (n = 1429), or placebo (n = 1412).

**Outcomes:** a composite endpoint consisting of an acute coronary heart disease event (myocardial infarction including silent infarction, unstable angina, acute coronary heart disease death, or revascularised cardiac arrest), coronary revascularisation procedures, or stroke.

**Patient follow up:** 99% (intention to treat analysis).

*See glossary.

**MAIN RESULTS**

The atorvastatin group had a lower rate of the composite endpoint than the placebo group (table). When assessed individually, the atorvastatin group had lower rates for acute coronary events and stroke, but not for coronary revascularisation (table).

**CONCLUSION**

In patients with type 2 diabetes mellitus, atorvastatin reduced major cardiovascular disease events.

Abstract and commentary also appear in ACP Journal Club

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Atorvastatin</th>
<th>Placebo</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite endpoint</td>
<td>5.8%</td>
<td>9.0%</td>
<td>35% (16 to 51)</td>
<td>32 (20 to 79)</td>
</tr>
<tr>
<td>Acute coronary events</td>
<td>3.6%</td>
<td>5.5%</td>
<td>35% (8 to 54)</td>
<td>53 (29 to 273)</td>
</tr>
<tr>
<td>Stroke</td>
<td>1.5%</td>
<td>2.8%</td>
<td>47% (11 to 68)</td>
<td>78 (42 to 411)</td>
</tr>
<tr>
<td>Coronary revascularisation</td>
<td>1.7%</td>
<td>2.4%</td>
<td>30% (–16 to 58)</td>
<td>Not significant</td>
</tr>
</tbody>
</table>

†Composite endpoint = an acute coronary heart disease event, coronary revascularisation, or stroke. Abbreviations defined in glossary; RRR, NNT, and CI calculated from data in article.