**Type 2 Diabetes – Lipid and Aspirin Therapy**

Measure fasting lipid panel at least annually. Initiate therapeutic lifestyle changes with all patients.

**Step 1: Treat severely elevated triglycerides.** If level is greater than 500 mg/dL, restrict dietary fats and carbohydrates, intensify blood glucose control, R/O hypothyroidism or other causes. Consider using fibrate, fish oil or Niaspan.

**Step 2: Assess CVD risk and LDL Cholesterol.** Initiate statin therapy if patient has any of the following:

- Personal history of CVD.
- LDL greater than 100 mg/dL.
- Over 40 years of age with at least 1 CVD risk factor in addition to diabetes.
- Consider statin therapy if age is less than 40 years with multiple CVD risk factors.

**Step 3: Determine target for statin therapy.**

- LDL less than 70 m/dL with CVD
- LDL less than 100 mg/dL with no CVD
- If target is not reached on maximal tolerated dose of statin, a reduction in LDL of 30 to 40% from baseline is an alternative target.

**Should combination therapy be considered?**

May be considered if LDL targets are not achieved on statin therapy alone.

- Combination therapy has not been evaluated in studies for either CVD outcomes or safety.

Patients cannot tolerate a statin?

- Try a different statin. If no statin is tolerated. May consider non-statin medication to lower LDL. However, Non-statin medications have not demonstrated benefit in CVD outcomes in people with diabetes.

**Should medications be used to treat elevated triglycerides (150-500 mg/dL) or a low HDL?**

No demonstrated benefits have been found in CVD outcomes in diabetes.

LDL-targeted therapy with statins has demonstrated the best evidence for CVD risk reduction in patients with diabetes with elevated LDL and/or other CVD risk factors.

**Table 1. Statin Medications for Lipid Management**

<table>
<thead>
<tr>
<th>Statin</th>
<th>Starting Dose</th>
<th>Maximum Dose</th>
<th>LDL</th>
<th>HDL</th>
<th>Triglyceride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosuvastatin (Crestcor®)</td>
<td>20 mg daily</td>
<td>40 mg</td>
<td>Decrease</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>&quot;Atrovastatin (Lipitor®)</td>
<td>10 mg daily</td>
<td>80 mg</td>
<td>Decrease</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Simvastin (Zocor®)</td>
<td>20 mg HS</td>
<td>40 mg</td>
<td>Decrease</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Lovastatin (Mevacor®)</td>
<td>20 mg daily</td>
<td>80 mg</td>
<td>Decrease</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Pravastatin (Prevachol®)</td>
<td>40 mg daily</td>
<td>80 mg</td>
<td>Decrease</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

*Only Rosuvastatin 20mg is on the IHS Core Formulary.*
Contraindications: acute liver disease, pregnancy, nursing mothers

- There are numerous drug interactions; consult package insert prior to prescribing.
- Simvastatin and Lovastatin - Caution or contraindication with strong CYP3A4 inhibitors (e.g., azole antifungals, erythromycins, HIV protease inhibitors, nefazodone).
- All statins - Caution or contraindication with gemfibrozil, cyclosporin, or danazol.
- Decrease dose of simvastatin with niacin, amiodarone, verapamil, diltiazem, amlodipine, and grapefruit.

Check ALT before initiating therapy; routine monitoring is not necessary.

### Table 2. Other Medications for Lipid Management

<table>
<thead>
<tr>
<th>Non-Statin Medications</th>
<th>Usual Dose</th>
<th>LDL</th>
<th>HDL</th>
<th>Triglyceride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gemfibrozil (Lopid ®)</td>
<td>600 mg BID</td>
<td>No effect</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>*Fenofibrate (Tricor ®)</td>
<td>145 mg daily</td>
<td>Decrease</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Niacin (Niaspan ®)</td>
<td>500 mg daily to 2 – 3 g HS</td>
<td>Decrease</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>*Fish Oil (Omacro® or OT)</td>
<td>2–4 g daily</td>
<td>Increase</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>*Ezetimibe (Zetia®)</td>
<td>10 mg daily</td>
<td>Decrease</td>
<td>No effect</td>
<td>No effect</td>
</tr>
<tr>
<td>*Cholesevalam (Welchol ®)</td>
<td>3 – 6 tab daily</td>
<td>Decrease</td>
<td>No effect</td>
<td>Increase or no effect</td>
</tr>
</tbody>
</table>

*These drugs are not on the IHS National Core Formulary.

### Contraindications:

**Statins:** active liver disease, alcohol abuse, pregnancy & lactation  
**Niacin:** active gout or peptic ulcer disease, active liver disease, pregnancy & lactation  
**Gemfibrozil:** active liver disease, gallbladder disease, pregnancy & lactation

### Aspirin Therapy

Consider aspirin dose 75 to 162 mg/day for patients with:
- Known CVD.
- Increased risk of CVD (10-year risk > 10%)
  - Includes most men over 50 yrs & women over 60 yrs with one or more 1 major CVD risk factors
  - Use clinical judgment if 10-year risk is 5-10%

If allergic to aspirin, consider clopidogrel 75 mg daily.

### References

Ref: ADA Clinical Practice Recommendations 2012, DIABETES CARE, VOLUME 35, SUPPLEMENT 1, JANUARY 2012. Accessed online [http://care.diabetesjournals.org/content/35/Supplement_1/S11.full.pdf+html](http://care.diabetesjournals.org/content/35/Supplement_1/S11.full.pdf+html)

IHS Core Formulary: [http://www.ihs.gov/nptc/index.cfm](http://www.ihs.gov/nptc/index.cfm)