Diabetes and aging

Robert Lash, M.D.
Old news: there’s a diabetes epidemic

![Graph showing the increase in percentage and number of people with diabetes over time.](image-url)

85% of patients are diagnosed after they turn 40

http://www.cdc.gov/diabetes/statistics/age/fig1.htm
Why is diabetes more common as we age?

- Age-related changes in glucose metabolism
- Obesity (sarcopenia, insulin resistance)
- Reduced physical activity
- Unhealthy diet
- Polypharmacy
- Coexisting illness
- Autoimmune phenomena
- Genetics
- Longevity

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The result – a lot of older Americans have diabetes
Areas of concern for older patients

- Glucose control targets
- Treatment choices (and avoiding hypoglycemia)
- Treating cholesterol and hypertension
- Complication screening
- Foot care
Glycemic control considerations

Good functional status
Life expectancy > 10 years
Short duration of diabetes
Minimal comorbidities

Hypoglycemia
Shorter life expectancy
Comorbidities/disabilities
Fall risk/functional impairment
Polypharmacy

A1c < 7.5%
Fasting glucose 140-150 mg/dL

A1c < 8.0%
Fasting glucose 160-170 mg/dL

A1c < 8.5%
Average glucose ~200 mg/dL
### Treatment choices (and avoiding hypoglycemia)

<table>
<thead>
<tr>
<th>Pre-1995</th>
<th>Post-1995</th>
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<tbody>
<tr>
<td>• Insulin</td>
<td>• Metformin</td>
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<td>• Sulfonylureas</td>
<td>• Disaccharidase inhibitors</td>
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Treatment choices (and avoiding hypoglycemia)

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<th>Weight gain</th>
<th>Weight loss or neutral</th>
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<th>Risk of hypoglycemia</th>
<th>No hypoglycemia</th>
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Emergency Hospitalizations for Adverse Drug Events in Older Americans

Budnitz DS, et. al.
Hypoglycemia is a frequent cause of drug-related emergency hospitalizations

A Systematic Review and Meta-Analysis of Hypoglycemia and Cardiovascular Events
A comparison of glyburide with other secretagogues and with insulin

Ganji AS, Cukierman T, Gerstein HC, et. al.
Glyburide causes more hypoglycemia than other sulfonylureas

<table>
<thead>
<tr>
<th>Comparator</th>
<th>Any hypoglycemia</th>
<th>All hypoglycemia (per patient-year)</th>
<th>Major hypoglycemia (per patient-year)</th>
<th>CV events</th>
<th>Death</th>
</tr>
</thead>
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<tr>
<td>Sulfonylureas</td>
<td><strong>1.83 (1.35-2.49)</strong></td>
<td><strong>1.44 (1.13-1.85)</strong></td>
<td>4.7 (0.78-28.1)</td>
<td>0.92 (0.71-1.19)</td>
<td>0.79 (0.47-1.32)</td>
</tr>
<tr>
<td>Insulin</td>
<td>0.88 (0.25-3.06)</td>
<td>0.09 (0.02-0.41)</td>
<td>ND</td>
<td>0.89 (0.7-1.14)</td>
<td>0.97 (0.79-1.20)</td>
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Treating cholesterol and hypertension

• Cholesterol
  • Statins remain a good idea
  • Reduce risk of CV events in patients with diabetes, regardless of starting LDL
  • This year’s controversy: should there (once again) be LDL targets?

• Hypertension
  • Hypertension is more common as we age
  • Most ‘bang for the buck’ in reducing CV risk
  • This year’s controversy: what treatment goal should we pick?
Complication screening

• Eye exams
  • Should still be yearly for most patients
  • Glaucoma and cataracts are more common in patients with diabetes

• Screening for kidney involvement
  • Yearly, unless patient is already on an ACE or an ARB

• Coronary artery disease
  • Check LDL
  • Ask about anginal symptoms, and listen carefully
  • It’s never too late to stop smoking
• Diabetes is the number one cause of non-traumatic foot amputations

• 50% of older patients with diabetes have neuropathy

• 30% of older patients with diabetes can’t see or reach their feet

• Feet should be examined at every visit, and home foot care reviewed

• Low threshold for referral to podiatry
Things to remember if you’re just waking up

• One-quarter of older Americans have diabetes

• Their treatment targets depend on their health and life expectancies

• Try to avoid hypoglycemia

• Don’t forget about treating hypertension and cholesterol

• Complication screening is still important

• Foot care is often overlooked. . . and shouldn’t be