Welcome to the PHASE Learning Community!

October 31, 2018
Webinar Housekeeping

2. Lines are muted. You can chat in questions or unmute your line by pressing *7 to ask a question (*6 to re-mute).
3. Webinar is being recorded and will be posted on careinnovations.org/phasesupport and a link will be emailed.
4. Please fill out our feedback survey at the end of the webinar.
5. Please participate in all polls during the webinar.
Lisa K. Gilliam, MD, PhD
Clinical Leader, Kaiser Northern California Diabetes Program
The Permanente Medical Group

Diabetes Medications: What Do I Need to Know?
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Wireside Chat
Diabetes Medications: What do I need to know?

Lisa Gilliam, MD, PhD
Clinical Leader
KP NCAL Diabetes Program
Agenda

1. Diabetes – how big is the problem?
2. Current target A1c recommendations
3. ADA guidelines
4. Kaiser National Adult Diabetes Guidelines
5. DM meds – old and new
6. Recent evidence in the literature supporting use of specific DM medications
7. Case studies
How much does diabetes cost?

- The total **direct** and **indirect** estimated cost of diagnosed diabetes in the United States in 2012 was $245 __BILLION__

- Average medical expenditures for people with diagnosed diabetes were about $13,700 per year
  - About $7,900 of this amount was attributed to diabetes

- After adjusting for age group and sex, average medical expenditures among people with diagnosed diabetes were about 2.3 times higher than expenditures for people without diabetes


How do we reduce or stabilize the cost?

• Prevent diabetes in unaffected individuals

• Effectively treat diabetes in affected individuals
  • Consider glycemic targets
  • Consider costs of different treatment options
  • Consider patient factors
What is optimal diabetes control?

DM care in the early 2000’s

- A1c < 7% for most
- The lower, the better
- One size fits all

ADA Standards of Medical Care in Diabetes—2012

The ADA proposes optimal targets, but each target must be individualized to the needs of each patient and his or her disease factors
### A1c Targets - ADA

<table>
<thead>
<tr>
<th>A1C</th>
<th>&lt;7.0% (53 mmol/mol)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preprandial capillary plasma glucose</td>
<td>80–130 mg/dL* (4.4–7.2 mmol/L)</td>
</tr>
<tr>
<td>Peak postprandial capillary plasma glucose†</td>
<td>&lt;180 mg/dL* (10.0 mmol/L)</td>
</tr>
</tbody>
</table>

*More or less stringent glycemic goals may be appropriate for individual patients. Goals should be individualized based on duration of diabetes, age/life expectancy, comorbid conditions, known CVD or advanced microvascular complications, hypoglycemia unawareness, and individual patient considerations. †Postprandial glucose may be targeted if A1C goals are not met despite reaching preprandial glucose goals. Postprandial glucose measurements should be made 1–2 h after the beginning of the meal, generally peak levels in patients with diabetes.*

ADA Standards of Diabetes Care - 2018
A1c Targets - ADA

Approach to the Management of Hyperglycemia

<table>
<thead>
<tr>
<th>Patient / Disease Features</th>
<th>More stringent</th>
<th>A1C 7%</th>
<th>Less stringent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risks potentially associated with hypoglycemia and other drug adverse effects</td>
<td>low</td>
<td>A1C 7%</td>
<td>high</td>
</tr>
<tr>
<td>Disease duration</td>
<td>newly diagnosed</td>
<td>A1C 7%</td>
<td>long-standing</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>long</td>
<td>A1C 7%</td>
<td>short</td>
</tr>
<tr>
<td>Important comorbidities</td>
<td>absent</td>
<td>A1C 7%</td>
<td>few / mild</td>
</tr>
<tr>
<td>Established vascular complications</td>
<td>absent</td>
<td>A1C 7%</td>
<td>severe</td>
</tr>
<tr>
<td>Patient attitude and expected treatment efforts</td>
<td>highly motivated, excellent self-care capabilities</td>
<td>A1C 7%</td>
<td>less motivated, poor self-care capabilities</td>
</tr>
<tr>
<td>Resources and support system</td>
<td>readily available</td>
<td>A1C 7%</td>
<td>limited</td>
</tr>
</tbody>
</table>

ADA standards of Diabetes Care - 2018
Antihyperglycemic Therapy in Adults with Type 2 Diabetes

At diagnosis, initiate lifestyle management, set A1C target, and initiate pharmacologic therapy based on A1C:

- **A1C is less than 9%, consider Monotherapy.**
- **A1C is greater than or equal to 9%, consider Dual Therapy.**
- **A1C is greater than or equal to 10%, blood glucose is greater than or equal to 300 mg/dL, or patient is markedly symptomatic, consider Combination Injectable Therapy (See Figure 8.2).**

**Monotherapy**

**Lifestyle Management + Metformin**

Initiate metformin therapy if no contraindications* (See Table 8.1)

**A1C at target after 3 months of monotherapy?**

- **Yes:** - Monitor A1C every 3–6 months
- **No:** - Assess medication-taking behavior  
  - Consider Dual Therapy

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ADA standards of Diabetes Care - 2018
Dual Therapy  Lifestyle Management + Metformin + Additional Agent

ASCVD?
Yes:  - Add agent proven to reduce major adverse cardiovascular events and/or cardiovascular mortality (see recommendations with * on p. S75 and Table 8.1)
No:  - Add second agent after consideration of drug-specific effects and patient factors (See Table 8.1)

A1C at target after 3 months of dual therapy?
Yes:  - Monitor A1C every 3–6 months
No:  - Assess medication-taking behavior
      - Consider Triple Therapy
<table>
<thead>
<tr>
<th>Table 8.1—Drug-specific and patient factors to consider when selecting antihyperglycemic treatment in adults with type 2 diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Efficacy</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Metformin</td>
</tr>
<tr>
<td>SGLT2 inhibitors</td>
</tr>
<tr>
<td>GLP-1 RAs</td>
</tr>
<tr>
<td>DPP-4 inhibitors</td>
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<tr>
<td>Thiazolidinediones</td>
</tr>
<tr>
<td>SGLT2 inhibitors</td>
</tr>
<tr>
<td>Insulin analogues</td>
</tr>
</tbody>
</table>

*See ref. 31 for description of efficacy. FDA approved for CVD benefit: CVD, cardiovascular disease; DKA, diabetic ketoacidosis; DKA, diabetic kidney disease; NASH, nonalcoholic steatohepatitis; RAS, receptor agonists; SQ, subcutaneous; T2DM, type 2 diabetes.*
Triple Therapy: Lifestyle Management + Metformin + Two Additional Agents

Add third agent based on drug-specific effects and patient factors# (See Table 8.1)

A1C at target after 3 months of triple therapy?

Yes:  - Monitor A1C every 3–6 months

No:   - Assess medication-taking behavior
      - Consider Combination Injectable Therapy (See Figure 8.2)
Initiate Basal Insulin
Usually with metformin +/- other noninsulin agent

**Start:** 10 U/day or 0.1–0.2 U/kg/day

**Adjust:** 10–15% or 2–4 units once or twice weekly to reach FBG target

**For hypo:** Determine & address cause; if no clear reason for hypo, ↓ dose by 4 units or 10–20%

If A1C not controlled, consider combination injectable therapy

Add 1 rapid-acting insulin injection before largest meal

**Start:** 4 units, 0.1 U/kg, or 10% basal dose. If A1C <8%, consider ↓ basal by same amount

**Adjust:** ↑ dose by 1–2 units or 10–15% once or twice weekly

Add GLP-1 RA

If not tolerated or A1C target not reached, change to 2 injection insulin regimen

Change to premixed insulin twice daily (before breakfast and supper)

**Start:** Divide current basal dose into ⅓ AM, ⅓ PM or ⅓ AM, ⅓ PM

**Adjust:** ↑ dose by 1–2 units or 10–15% once or twice weekly until SMBG target reached

ADA standards of Diabetes Care - 2018
How does a health plan achieve optimal diabetes control?
Kaiser Permanente Northern California: Leader in diabetes control

2017
#3 in the US for A1c <8%

• 67% of DM patients have A1c under 8%
  • Regional target = 73%

• 81% of DM patients have A1c under 9%
  • Regional target = 86%
What has the KP NCal strategy been??

Alogliptin (Nesina)
Empagliflozin (Jardiance)
Linagliptin (Tradjenta)
Metformin
Liraglutide inj (Victoza)
Pioglitazone (Actos)
Glimiperide (Amaryl)
Canagliflozin (Invokana)
Saxagliptin (Onglyza)

Lispro (Humalog)
NPH insulin
Regular insulin
Dulaglutide inj (Trulicity)
Dapagliflozin (Farxiga)
Albiglutide inj (Tanzeum)
Sitagliptin (Januvia)
Glipizide (Glucotrol)
Glargine (Lantus)
Exenatide inj (Byetta)
Exenatide ER inj (Bydureon)
In patients with type 2 diabetes not controlled on metformin monotherapy, initiate combination therapy using a second-line agent (sulfonylurea, thiazolidinediones [TZDs], DPP4, basal insulin, SGLT-2 inhibitor, or GLP-1 receptor agonist). When selecting second- or third-line agents after metformin, **consider factors** such as comorbidities (eg, presence of clinical atherosclerotic cardiovascular disease [ASCVD]), patient preferences (eg, oral vs injectable route, side effect profile, cost to patient, etc.), adherence, and drug characteristics.
What has the KP NCal strategy been??

- Alogliptin (Nesina)
- Empagliflozin (Jardiance)
- Linagliptin (Tradjenta)
- Metformin
- Liraglutide inj (Victoza)
- Pioglitazone (Actos)
- Canagliflozin (Invokana)
- Glimepiride (Amaryl)
- Saxagliptin (Onglyza)
- Acarbose (Precose)
- Lispro (Humalog)
- NPH insulin
- Regular insulin
- Dulaglutide inj (Trulicity)
- Dapagliflozin (Farxiga)
- Glipizide (Glucotrol)
- Sitagliptin (Januvia)
- Albiglutide inj (Tanzeum)
- Liraglutide inj (Victoza)
- Exenatide inj (Byetta)
- Exenatide ER inj (Bydureon)
- Glargine (Lantus)
Key Factors in NCAL Performance

• Technology Tools: PROMPT

• Responsibility: Accountable Population Managers, or “APMs”
  • PharmDs or RNXs – manage panels of patients with diabetes and other CV risk factors

• Accountability: PROMPT Reporting
OK, so what medications should I use??
DM meds cost key (cost per year/patient)

- <$100 - $
- $100 - 500 - $$
- $500-1000 - $$$$
- $1000-2000 - $$$$$$
- $2000-6000 - $$$$$$$$
- >$6000 - $$$$$$$$$
Biguanides

• **Metformin (Glucophage) - $**
• Uncontested first line agent
• Decreases hepatic glucose production, decreases intestinal absorption of glucose and improves insulin sensitivity
• 1% ↓ A1c

**Advantages**
- Oral
- Affordable
- Long clinical experience
- ↓ microvascular risk (UKPDS)
- Potential CVD benefit
- Weight neutral (potential for modest loss)
- No hypoglycemia

**Disadvantages**
- GI SEs
- Low risk for lactic acidosis
- Contraindicated if low GFR (<30) or LFTs >3x
- Potential for B12 deficiency
Sulfonylureas (SU)

- **Glipizide (Glucotrol), Glimepiride (Amaryl), Glyburide (Glynase) - $**
- Stimulates pancreatic beta cell insulin secretion
- 1-1.25% ↓ A1c*

**Advantages**
- Oral
- Affordable
- Long clinical experience
- ↓ microvascular risk (UKPDS)

**Disadvantages**
- Hypoglycemia risk
  - 1-3% risk for severe hypoglycemia
- Weight gain (avg <5 kg)

*Expected decrease in A1c (%) with MONOtherapy, actual A1c lowering when used as 2nd or 3rd line agent will be less
Thiazolidinediones (TZD)

- **Pioglitazone (Actos)** - $, Rosiglitazone (Avandia) - $$$$$
- Activates PPAR gamma, ↑ insulin sensitivity
- 1-1.25% ↓ A1c

**Advantages**
- Oral
- Affordable
- No hypoglycemia
- Potential CVD benefit (Pioglitazone)

**Disadvantages**
- CHF [FDA black box warning]
  - <0.2% overall, 2-5% in high risk
  - **Contraindicated** in III/IV CHF
- Edema (25%)
- Weight gain (Avg 1-3 kg)
- ↑ Fracture risk
- ↑ Bladder CA? - mixed data [avoid in patients at risk for bladder CA]
Basal Insulin

- **NPH (Humulin N) - $$$$**
- Analogs - Glargine (Lantus), Detemir (Levemir), Degludec (Tresiba) - $$$$$$ to $$$$$$$
- **Unlimited ↓ A1c**

**Advantages**
- Affordable (NPH vials)
- **Unlimited efficacy**
- Long clinical experience
- ↓ microvascular risk (UKPDS)

**Disadvantages**
- Injected
- Hypoglycemia risk
- Weight gain (<5 kg)
Is glargine better than NPH?

Human insulin as safe and effective to treat type 2 diabetes as costlier insulin analogs

By Karen N. Peart | JUNE 26, 2018

DPP4 inhibitors

- Linagliptin (Tradjenta), Sitagliptin (Januvia), Alogliptin (Nesina), Saxagliptin (Onglyza) – $$$$$
- Inhibits DPP-4 which $\uparrow$ GLP
- GLP-1: $\downarrow$ food intake, $\downarrow$ gastric emptying $\uparrow$ insulin release, $\downarrow$ post-prandial glucagon
- 0.6-0.8% $\downarrow$ A1c

**Advantages**
- Oral
- Weight neutral
- No hypoglycemia
- Generally few SEs

**Disadvantages**
- Not affordable
- Angioedema/urticaria
- Joint pain
- Risk for acute pancreatitis
- Poss $\uparrow$ CHF hospitalizations (Alogliptin and Saxagliptin)
SGLT2 inhibitors

• Empagliflozin (Jardiance), Dapagliflozin (Farxiga), Canagliflozin (Invokana), Ertugliflozin (Steglatro) - $$$$$$
• Blocks renal glucose reabsorption, promotes glucosuria
• 0.7-1.1% ↓ A1c

Advantages
• Oral
• Modest weight loss (~2-3 kg)
• No hypoglycemia
• ↓ blood pressure
• CV benefit in patients with established CVD (empagliflozin, canagliflozin)
• Reduce progression of DKD (empagliflozin, canagliflozin)

Disadvantages
• Not affordable
• GU infections (10%)
  • UTI/urosepsis, pyelonephritis, Fournier’s gangrene
• FDA black box - Risk of amputation (canagliflozin)
• DKA
• Polyuria/hypotension/dizziness
• ↑ Fracture risk (canagliflozin)
• Not effective in pts with renal impairment and contraindicated for GFR<30 to <60, depending on agent

If prescribing Empagliflozin, start with ½ tabs (½ of 25 mg tab = 12.5 mg) to reduce cost from $$$$$ to $$$$
Empagliflozin reduced death from CVD causes IN PATIENTS AT HIGH RISK (Hazard ratio, 0.86 (95% CI, 0.74–0.99)

Canagliflozin reduced death from CVD causes IN PATIENTS AT HIGH RISK (Hazard ratio, 0.86 (95% CI, 0.75–0.97)

Inc risk of amputation (Hazard ratio 1.97, 95% CI 1.41 to 2.75)
ADA/EASD panel stance on SGLT2 inhibitors

For the SGLT2 inhibitors studied to date, it appears that among patients with established CVD, there is likely cardiovascular benefit, with the evidence of benefit modestly stronger for empagliflozin than canagliflozin.
GLP-1 receptor agonists

- Exenatide ER inj (Bydureon), Exenatide inj (Byetta), Liraglutide inj (Victoza), Dulaglutide inj (Trulicity), Semaglutide (Ozempic), Lixisenatide (Adlyxin) – $$$$$ to $$$$$$

- GLP-1: ↓ food intake, ↓ gastric emptying
  - ↑ insulin release, ↓ post-prandial glucagon

- 0.7-1.5 ↓ A1c

**Advantages**
- Modest weight loss
- Once weekly dosing (Exenatide ER)
- No hypoglycemia
- CV benefit in patients with established CVD (Liraglutide)
- Reduce progression of DKD (Liraglutide)

**Disadvantages**
- Injected
- GI SE’s (N/V, diarrhea in 20-40%)
- VERY costly
- Contraindicated if FHx of MTC or MEN2 (Black box warning)
- Acute pancreatitis risk (?)
Leader Trial – 2016

• Liraglutide (Victoza) reduced death from CVD causes (hazard ratio, 0.87; 95% CI, 0.78 to 0.97)
• 2.3 kg more weight loss
• ~80% had established CVD
• Unknovnss:
  • Helpful for primary prevention?
  • Class effect? (Evaluation of other GLP-1 agents for CVD benefit were +/-
    • SUSTAIN trial – probable benefit for Semaglutide
    • EXSCEL and ELIXA trials did not show benefit for Exenatide ER or Lixisenatide
ADA/EASD panel stance on GLP1 RAs

Taken together, it appears that among patients with established CVD, some GLP1 receptor agonists may provide cardiovascular benefit, with the evidence of benefit strongest for liraglutide, favorable for semaglutide, and less certain for exenatide. There is no evidence of cardiovascular benefit with lixisenatide.
Cases
Case 1 – Bernie’s next steps?

• Bernie U. Rheinhard is a 57 year-old lady with type 2 diabetes whose last three hemoglobin A1C values were, in order, 7.9%, 8.5% and 9.5%.

• Meds:
  • Metformin 2,000 mg once daily
  • Glipizide 10 mg twice daily
  • She has a prescription for fluconazole 150 mg PO x 1 for yeast infections with 11 refills

• Bernie is currently complaining of UTI sx. Today is the fourth time in the past three months she has mentioned these symptoms to you. While steering her back to the blood sugars, you recognize her A1C trend and recommend adjusting her medication regimen.
Case 1 – Bernie’s next steps?

You decide to...

(A) Add linagliptin (Tradjenta)
(B) Add empagliflozin (Jardiance)
(C) Add pioglitazone (Actos)
(D) Add bedtime NPH insulin
(E) A, C, or D

Hints:
• Current meds: Metformin + Glipizide
• A1c 9.5%
• Considerations: UTI sx's
Case 1 – Bernie’s next steps?

Answer:
(A) Add linagliptin (Tradjenta) - NO – her a1c is 9.5% and no oral hypoglycemic will get her to goal...
(B) Add empagliflozin (Jardiance) - NO – for reasons above, AND this woman is at high risk for genital yeast infections. Empagliflozin will only cause more problems and cost a lot, without getting her to goal.
(C) Add pioglitazone (Actos) - NO - This is wrong for the same reason that (A) is wrong.
(D) Add bedtime NPH insulin - YES - Insulin is the only medication likely to help her achieve the necessary A1C reduction.
(E) A, C, or D - NO - neither (A) nor (C) is correct.
Case 2 - Best option(s) for a 2\textsuperscript{nd} line agent

• “Tobacco Red” is a 48 year-old dye-worker with type 2 diabetes:
  • Smokes 3 packs per day for the last 40 years
  • Describes some exertional left-sided chest pain
  • He has beaten bladder cancer twice in last 10 years
  • His current BMI is 55.3
  • Last three quarterly A1C levels were:
    • 7.5%
    • 7.8%
    • 8.1%
• Current DM meds:
  • Metformin XR 2 gm PO qd

• Tobacco Red has been stable on this regimen for the last 3 years. At this point, the best course of action would be to...
Case 2- Best option(s) for a 2nd line agent

(A) Do nothing
(B) Add Pioglitazone (Actos)
(C) Add bedtime NPH
(D) Add Liraglutide (Victoza)
(E) Add Empagliflozin (Jardiance)

Hints:
- Current meds = Metformin 2000 mg qd
- Considerations: A1c 8.1%, Obesity (BMI 55), smoker, chest pain, h/o bladder CA
Does Pioglitazone cause bladder cancer?

• Dormandy, Lancet 2005: 366, 1279 - PROspective pioglitAzone Clinical Trial In macroVascular Events (PROactive) study – YES
  • Erdmann, Diabetes Obes Metab 2014: 16, 63 – PROactive update – NO
• Lewis, JAMA 2015: 314, 265 – Cohort and nested case-control study – NO
• Tuccori, BMJ 2016; 352:i1541 – Cohort study – YES
• AHRQ review (Diabetes Medications for Adults With Type 2 Diabetes: An Update, April 2016) - NO
  • Used most rigorous evidence which evaluated people prospectively

• **Mixed/weak evidence** – highest quality studies have not found an association
Case 2- Best option(s) for a 3rd line agent

(A) Do nothing  
(B) Add Pioglitazone (Actos)  
(C) Add bedtime NPH  
(D) Add Liraglutide (Victoza)  
(E) Add Empagliflozin (Jardiance)

Hints:  
- Current meds = Metformin 2000 mg qd  
- Considerations: A1c 8.1%, Obesity (BMI 55), smoker, chest pain, h/o bladder CA
Case 2- Best option(s) for a 2nd line agent

Answers:
(A) Nothing - **NO** – A1c has been increasing, likely to continue to rise unless you take action
(B) Add Pioglitazone (Actos) - **NO** - adding Actos will get you sued when he develops bladder cancer for the 3rd time
(C) Add bedtime NPH – **NO** – more cost effective and clinically effective, but no CVD benefit, and likely to cause weight gain
(D) Add Liraglutide (Victoza) – **YES** - less cost-effective, but weight negative effect (which this gentleman needs), may reduce his risk for CVD death.
(E) Add Empagliflozin (Jardiance) – **YES** – less cost effective, but weight negative, and may reduce risk for CVD death
Case 3 - what is Terry’s next best course of action?

- “Terry Treetrunkelegs” is a 55 year-old lover of salt with type 2 diabetes who recently graduated to the 4th stage of CHF. She is quite proud of her accomplishment and feels a debt of gratitude to her hubby Jim, who buys her six nightly margaritas with salt at her favorite Mexican Restaurant. Her weight has increased by 5 lbs over the last 12 hours.
- Terry has battled pancreatitis and won four different times.
- Terry currently takes glipizide 10 mg PO bid
- Her last three quarterly A1C values:
  - 7.2%
  - 7.8%
  - 8.5%
Case 3 - what is Terry’s next best course of action?

(A) Add metformin
(B) Add Pioglitazone (Actos)
(C) Increase glipizide to 20 mg PO BID
(D) Start bedtime NPH
(E) Add Exenatide ER inj (Bydureon)

Hints:
- Current meds = Glipizide 10 bid
- Considerations: A1c 8.5%, Stage IV CHF, h/o recurrent pancreatitis
Case 3 - what is Terry’s next best course of action?

Answers:
(A) Add metformin - NO - Metformin is contraindicated due to risk of lactic acidosis in acute CHF
(B) Add Pioglitazone (Actos) - NO – Pioglitazone (Actos) is contraindicated in CHF class 3 or higher
(C) Increase glipizide to 20 mg PO BID - NO – The difference in efficacy between 20 mg and 40 mg of glipizide daily is small
(D) Start bedtime NPH - YES - Insulin is needed for this patient
(E) Add Exenatide ER inj (Bydureon) - NO - This is a good way to get sued when Jim and his margaritas provoke pancreatitis bout #5.
Case 4 – Sugar’s second choice?

• “Sugar T. Lowe” is a 74 yo lady with longstanding type 2 diabetes (>20 years) who has the local EMS team on her Christmas card list after several visits to the ED for hypoglycemia when she was previously taking glipizide. She also got to see her EMS friends recently after getting out of bed too quickly, feeling dizzy and conking her head on the nightstand, leading to unconsciousness.

• Recent A1c 8.4%.

• Meds:
  • Metformin 1000 bid
  • Donepezil (Aricept) for “senior moments” (she’s very forgetful these days)
Case 4 – Sugar’s second choice?

(A) Add empagliflozin (Jardiance)
(B) Add pioglitazone (Actos)
(C) Start bedtime NPH
(D) Add linagliptin (Tradjenta)
(E) B or D

**Hints:**
- Current meds = Metformin 1000 mg bid
- Considerations: A1c 8.4%, h/o severe hypoglycemia, longstanding DM, occasional dizziness, early dementia
Case 4 – Sugar’s second choice?

Answers:

(A) Add empagliflozin (Jardiance) - NO - empagliflozin (Jardiance) would not be a great option in an elderly patient with dizziness/fall risk because it lowers BP.

(B) Add pioglitazone (Actos) - YES - Pioglitazone (Actos) would be a good option in this case, and is cost-effective. Target A1c in this lady would be <8% because of h/o severe hypoglycemia and comorbid conditions (early dementia), and this target would probably be readily achieved by adding pioglitazone, while you would not increase her risk for hypoglycemia.

(C) Start bedtime NPH - NO – with history of severe hypoglycemia on glipizide, NPH would not be a great option for this lady.

(D) Add linagliptin (Tradjenta) - YES – linagliptin (Tradjenta) would be a good option for the same reasons listed above for Pioglitazone (Actos). However, this option is less cost-effective.

(E) B or D - YES - either (B) or (D) is correct.
Thanks for your attention!

Questions??
SMBP Community of Practice

Next call: Friday, Nov. 2, 12-1pm.

Interested in getting involved?
Let Alexis know.
Register Now!
In-Person PHASE Convening

Thursday, November 29
8:30 a.m. – 4 p.m.
Preservation Park, Oakland

Please Register by November 12: