To Boost or Not to Boost: Exploring blood sugar dilemmas

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Learning Objectives

• At the completion of this CE program, the participant will be able to:
  1. Define clinical inertia
  2. Discuss the causes and consequences of clinical inertia in types 2 diabetes
  3. Given a patient case, determine if you would boost or not boost treatment in a patient with type 2 diabetes
  4. Identify the ways that pharmacists can reduce clinical inertia

Did you know?

• 34.2 million Americans—just over 1 in 10—have diabetes
  • 88 million American adults—approximately 1 in 3—have prediabetes
• Only 1 in 4 US adults with diagnosed diabetes met care goals for hemoglobin A1C, blood pressure, and cholesterol in 2018
• $1 in every $7 is spent on treating diabetes and its complications

Definition

• inertia
  • /ɪnˈɜrʃə/ noun
  A tendency to do nothing or to remain unchanged

The many definitions of clinical inertia

A disconnect between guidelines and clinical practice

- Failure to start or intensify treatment when indicated
- Failure to de-intensify treatment when indicated
- Failure to initiate insulin or establish goals of care
- Lack of any intervention that can lead to prevention or progression of diabetes and its complications
Current practice recommendations

Initial treatment of type 2 diabetes
- Comprehensive lifestyle changes
- Metformin, unless contraindicated
- To avoid inertia, reassess and modify treatment regularly (every 3-6 months)

Clinical inertia in "the real world"

Time to treatment intensification with second oral antidiabetic drug (OAD)

- A1c > 7%
- A1c > 7.5%
- A1c > 8%

Median time to treatment intensification for OAD:
- A1c > 7%: 1.18 years
- A1c > 7.5%: 1.82 years
- A1c > 8%: 2.56 years

Clinical inertia in "the real world"

- Clinical inertia in newly diagnosed patients with type 2 diabetes who fail metformin monotherapy
  - Median time to treatment intensification = 1.18 years

Baseline A1c Number of patients Intervention ≤ 6 months, no clinical inertia Intervention > 6 months, clinical inertia

- A1c > 7%: 1,168 patients, 725 (62%) 443 (38%)
- A1c > 7.5%: 679 patients, 469 (69%) 210 (31%)
- A1c > 8%: 429 patients, 309 (72%) 120 (28%)

Clinical inertia among patients with type 2 diabetes on stable doses of 2 OADs

A1c > 7%: 46.8% A1c > 7.5%: 46.6% A1c > 8%: 58.8%

The bottom line...

Median time to treatment intensification in type 2 diabetes when A1c ≥ 7% is > 1 year
The other bottom line...
Inertia goes both ways

Consequences of inertia
1. Prolonged hyperglycemia
2. Increased risk of diabetes-related complications
3. Increased health care expenditure
4. Reduced life expectancy


What drives inertia?

What causes of inertia do you see in your workplace?

DISCUSSION

To Boost or not to Boost

LET'S EXPLORE COMMON BLOOD SUGAR DILEMMAS

Patient case 1

• KW is a 56 year old obese female diagnosed with type 2 diabetes 3 years ago. She currently takes metformin 1,000 mg PO BID, empagliflozin 25 mg PO daily, and dulaglutide 1.5 mg SC weekly. She is compliant with her follow-up visits and has been working on weight loss efforts. A review of her refill history supports proper medication adherence.
• PMH: T2DM, menopause, obesity, hypothyroidism, tobacco abuse
• Her current A1c is 7.2% (eAG = 160 mg/dL)
Rationale to BOOST

- Intensive glycemic control significantly decreases rates of microvascular complications in patients with short-duration type 2 diabetes
- Enduring effects of early glycemic control on most microvascular complications
  - "Legacy effect"


Patient case 2

- PP is an 87 year old female with type 2 diabetes diagnosed over 30 years ago. She currently takes insulin glargine (Glar-100) 22 units SC daily and insulin aspart 6 units SC TID before meals.
- PMH: T2DM, osteoporosis, CKD Stage 3, vascular dementia, HTN, TIA in 2017, osteoarthritis of the R knee, depression
- Social history: Lives alone, does not drive, requires interpreter services
- Her current A1c is 7.8% (eAG = 177 mg/dL)

DISCUSSION

What would you recommend to reduce inertia for KW?

Rationale to NOT BOOST

ADA recommendations on glycemic targets in older adults

<table>
<thead>
<tr>
<th>Patient characteristics &amp; health status</th>
<th>Rationale</th>
<th>Reasonable A1c goal</th>
<th>Fasting or pre-prandial glucose (mg/dL)</th>
<th>Bedtime glucose (mg/dL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy (few coexisting conditions, intact cognition &amp; functional status)</td>
<td>Longer remaining life expectancy&lt;br&gt; &lt; 7.5%&lt;br&gt; 80-130&lt;br&gt; 80-100</td>
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<tr>
<td>Complex / intermediate (multiple coexisting conditions, &gt; 2 instrumental ADL impairments, limited remaining life expectancy)</td>
<td>Intermediate remaining life expectancy&lt;br&gt; High treatment burden, vulnerability, fall risk&lt;br&gt; &lt; 9%&lt;br&gt; 90-150&lt;br&gt; 100-180</td>
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<tr>
<td>Very complex / poor health (LTC or end-stage chronic illness, moderate-to-severe cognitive impairment, &gt; 2 ADL dependencies)</td>
<td>Limited remaining life expectancy&lt;br&gt; Makes benefits uncertain&lt;br&gt; Avoid reliance on A1C&lt;br&gt; Decisions should be individualized&lt;br&gt; 100-180&lt;br&gt; 150-200</td>
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ADL = activities of daily living<br> LTC = long term care

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Patient case 3

- TN is a 37 year old obese male presenting to his PCP for his annual wellness visit. He takes ergocalciferol 50,000 units once weekly. He generally feels well and has no complaints today.
- PMH: Obstructive sleep apnea, obesity, vitamin D deficiency
- Social history: Works from home, social smoker
- His current A1c is 5.7% (eAG = 117 mg/dL), fasting glucose = 108 mg/dL

What would you recommend to reduce inertia for TN?

Rationale to BOOST

- Lifestyle modifications can reduce chance of developing diabetes by 58%1
  - 10-yr follow-up: Delays onset of T2DM by 34%2
  - 15-yr follow-up: Delays onset of T2DM by 27%2
- Taking metformin lowers chance of developing diabetes by 31%1
  - 10-yr follow-up: Delays onset of T2DM by 18%2
  - 15-yr follow-up: Delays onset of T2DM by 18%2

What is the pharmacist’s role in reducing clinical inertia?

The Pharmacist’s Role

- Team-based care
- Collaborative practice agreements
- End diabetes stigma
- Identify appropriate patients
- Enhance access to medications
- Education
Summary

- The decision to intensify a patient’s antidiabetic treatment regimen is complex and multifactorial
- Clinical inertia has three primary causes: the provider, the patient, and health-system factors
- The need to prevent, or to intervene to eliminate, clinical inertia in diabetes management has never been greater
- Pharmacists are well positioned to help mitigate clinical inertia

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THANK YOU FOR YOUR ATTENTION AND PARTICIPATION!

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