Panel Discussion: Medication Adherence
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Steven V. Edelman MD
Laura Barba, RN, CDE, FNP
Saturday, February 10, 2018
8:00 a.m. – 9:15 a.m.

This session will address the issue of problematic medication adherence, with a special focus on patients with type 2 diabetes. The panelists will review data illustrating the scope and magnitude of the problem, the impact of problematic adherence on long-term outcomes and health care costs, and the key contributors to poor medication adherence. Through the use of illustrative case studies, the barriers and challenges that patients and their health care providers face regarding medication adherence will be discussed, practical strategies for assessing and addressing adherence will be put forward, and potential future approaches for enhancing long-term adherence and persistence will be reviewed. As an overarching goal, this panel discussion hopes to highlight the need for a more collaborative relationship between patients and health care providers that is respectful of the role that patients play in their own treatment decisions.

References


MEDIATION ADHERENCE

William H. Polonsky, PHD, CDE
Steven V. Edelman, MD
Laura Barba, FNP, MS, CDE

T2D Developments In The Past Decade

- DPP4 inhibitors (4 in the class)
- SGLT2 Inhibitors (3 in the class)
- GLP1-RA (5 in the class)
- Newer basal insulins
- Fixed combinations of GLP1-RA & basal insulins
- Insulin pumps for T2Ds (VGo, T-Flex)
- Inhaled insulin
- Software programs and multiple apps

Quiz #1

Over the past 10 years, glucose control (A1c) in people with diabetes in the US has:
1. Significantly improved
2. Hasn’t changed much
3. Significantly worsened

A1C: No Change Over the Last Decade

NHANES Data

% of Patients Achieving HbA1c <7%

2003-2006: 56.8%  
2007-2010: 52.2%  
2011-2014: 50.9%

NHANES, National Health and Nutrition Examination Survey.

A1C: No Change Over the Last Decade

Over the past 10 years, glucose control (A1c) in people with diabetes in the US has:
1. Significantly improved
2. Hasn’t changed much
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Commercial HMO and Medicaid Population Results Are Even Worse

HEDIS data from >1000 health plans covering >171 million lives (2014)

ONLY ABOUT 40% OF PATIENTS ARE AT HbA1c <7%

ONLY ABOUT 30% OF PATIENTS ARE AT HbA1c <7%

Rates Of Very Poor Glycemic Control Have Also Not Improved

HEDIS data from >1000 health plans covering >171 million lives in 2014

% OF DIABETIC PATIENTS WITH VERY POOR GLYCEMIC CONTROL (HbA1c >9%) IN THE US

2005: 29.7%  
2014: 31.1%

NHANES, National Health and Nutrition Examination Survey.
Medical Costs of T2D are Increasing

Total US Medical Costs for Diabetes From 2007 to 2020 (in billion US dollars)*

* Includes medical costs of type 2 diabetes and related complications.

>$1000 cost burden for every person in US

What’s Wrong With This Picture?

NO CHANGE IN % OF PATIENTS AT HbA1c <7% 1,2
AT BEST, ONLY ABOUT 50% OF PATIENTS AT GOAL 1,2
NO CHANGE IN % OF PATIENTS WITH VERY POOR CONTROL 3
DIABETES RELATED COSTS TO SOCIETY ARE TREMENDOUS

ALL THIS DESPITE OVER 40 T2D TREATMENT OPTIONS APPROVED SINCE 2005 5

Efficacy In Clinical Trials Is Not Translating To The Real World

Effective In Clinical Trials Is Not Translating To The Real World

CLINICAL TRIAL

REAL WORLD

Efficacy Gap: Clinical Trial Vs. Real-World Results for GLP-1’s and DPP-4’s

GLP-1 RA
(12 months)

DPP-4i
(12 months)

Baseline HbA1c

Change in HbA1c (%)

-0.8%

GAP

-0.6%

GAP

11 CLINICAL TRIALS

REAL WORLD

Reference:

Investigating The Efficacy Gap Between Clinical Trial And Real-world Results

Real-World Results Predicted Using Typical Clinical Trial Conditions

*Linear regression models fitted to estimate the change in HbA1c 1 year after initiating GLP-1 RA or DPP-4i based on baseline and treatment characteristics. Change in HbA1c 1 year after initiating GLP-1 RA or DPP-4i based on baseline and treatment characteristics. Baseline characteristics included in the model include previous exposure to GLP-1 RA or DPP-4i, duration of diabetes treatment, and baseline HbA1c. Matched controls included in the model include previous exposure to GLP-1 RA or DPP-4i, duration of diabetes treatment, and baseline HbA1c. Matched controls included in the model include previous exposure to GLP-1 RA or DPP-4i, duration of diabetes treatment, and baseline HbA1c.

Carls GS et al. 76th ADA Scientific Sessions. June 10-14, 2016. Poster 117 LB.

Poor Adherence is the Key Contributor to the Efficacy Gap

Baseline Characteristics, Additional Drug Therapy

Change in HbA1c (%)
Real-World Results Predicted Using TYPICAL Clinical Trial Conditions
Real-World Results
Change in HbA1c (%)
Baseline Adherence

Why Are Patients in Clinical Trials More Adherent to Therapy?

Extra Support and Attention
More HCP visits, support, monitoring, follow-up, access to resources

Higher Motivation
Trial participants often more concerned with their health and tx
Cash incentives

Finite Period of Therapy
Defined length of commitment provides focus, ability to stay on track

Problematic Adherence and Persistence in the Real World

Prescriptions are not always filled, taken properly, or refilled as directed

Defining Poor Adherence

- Proportion of days covered (PDC), measured after the first fill
- By current definition, patients can miss 20% of days covered and still be considered adherent
- Definition doesn’t account for
  - Prescriptions for diabetes medications that are never filled at all
  - What the patient actually takes

Nearly 1/3 of New e-Prescriptions for Diabetes Meds are Never Filled

Among 75,589 INSURED PATIENTS TREATED BY 1217 PRESCRIBERS IN THE FIRST YEAR OF A COMMUNITY-BASED E-PRESCRIBING INITIATIVE

Underestimates the degree of poor adherence

31%
Adherence Rates For Oral Agents Are Less Than 50%

Every 10% Decrease in Adherence is Linked to 0.1% A1C Increase

Poor Adherence Leads to Increased Risk of Hospitalization and All-Cause Mortality

North American Results in LEADER

Case From the VA Diabetes Clinic

- 54 year old T2D female on metformin 1000 BID, sitagliptin 100 QD, liraglutide 1.8 QD, glargine 100 units/day, 80 - 100 units of aspart with each meal
- A1c consistently > 13%, BG values were 300 – 500 mg/dl a significant amount of the time
- Comes in every 3 months with her supportive husband, is “taking the medication as prescribed”
Case From the VA Diabetes Clinic

- I had her come to clinic, gave her 25 units of aspart
- 10am: BG 347 mg/dl
- 11am: BG 141 mg/dl
- 11:15am: BG 71 mg/dl
- Got her a 16oz coke; she sipped it very slowly
- Ran across the VA to get glucagon
- When I returned, she was incoherent
- Gave her glucagon, called a “Rapid Response” code

Over $7,000 of insulin alone

In Summary

- Only ~50% of patients with T2D have A1C <7%; this has not changed over the last decade despite over 40 new treatment options
- Clinical trial outcomes are not replicated in the real world due to staggering rates of poor adherence

But Wait: Is Medication Adherence the Real Problem?

[Graph showing self-care behaviors and covariates]
**Intervention Strategies to Address Medication Adherence**

- Written medication instructions
- Enhancing HCP adherence skills
- Goal setting
- Stimuli/prompts to take medications
- Enhancing support from significant others
- Special packaging of medications
- Self-monitoring of medication adherence
- Habit analysis and intervention

**Intervention Strategies to Address Medication Adherence**

- Medication side effect management
- Feedback about medication adherence
- Medication calendars
- Enhancing patient self-management skills
- Providing consequences/rewards for adherence
- Motivational interviewing
- Stress management

**Effectiveness of Current Intervention Strategies**

*Review of 771 RCTs indicate that effects are, at best, modest (Cohen’s d):*

- Overall: 0.29
- Behavioral strategies: 0.33
- Addressing habits: 0.37
- No behavioral strategies: 0.28

“Much room remains for improvement.”

**WHAT ARE WE MISSING?**

**The Presumed Problem:** Forgetful/Disorganized

**The Common Solution:** Address Forgetfulness/Disorganization
“Patient’s medication beliefs, especially perceived need for medication and perceived medication affordability, were strong predictors of unintentional non-adherence.”

Gadkari and McHorney, 2012

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“It’s our job to help patients live as long as possible free of CVD complications. Although most patients share that goal, we don’t always see the same pathways to get there. I want to believe that if patients knew what I know, they would take their medicine. What I’ve learned is that if I felt what they feel, I’d understand why they don’t.”

Rosenbaum, 2015

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Co-Pays and Oral Medications

% of Days Medication Taken

Low  Medium  High


Lack Of Physician Trust

Mean Absolute Prevalence Rates (%)

Confidence: 

Involved you in decisions?

Understood your problems with treatment?

Put your needs first?

61%  65%  62%  63%  72%

LOWER TRUST  HIGHER TRUST

Medication Beliefs

Perceived worthwhileness: Does the patient believe the benefits of the medication outweigh the costs?

PERCEIVED BENEFITS

- Adverse effects
- Concerns about long-term adverse effects
- Represents “sickness”

PERCEIVED COSTS

- Rarely apparent
- HCP may state that long-term risks are reduced

Medication Beliefs

ROY

Takes 2 oral medications for T2D and basal insulin; his last HbA1c was 6.8%

WHO IS DOING BETTER WITH HIS DIABETES?

SAM

 Doesn’t take any medications for T2D; his last HbA1c was 9.1%

ROY. How healthy you are, and your risk of complications, is not determined by how much medication you take. It is your metabolic results that matter. Even if you are not taking pills or insulin, high blood sugars will likely lead to future problems.


Failure to Warn Claims

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Why Do Patients Feel This Way?

- Threatening patients with medication
  - “If you can’t make some positive changes, then we’ll have no choice but to put you on more medication, and perhaps even start insulin.”
- Underlying messages
  - More medication should be avoided at all costs
  - You have failed
  - You are to be punished

So What to Do?

1. Ask correctly

   - “Any problems taking those medications?”
   - “What’s one thing about taking your medications that’s been challenging?”

So What to Do?

2. Forgetfulness

   - “Aside from forgetting, what else is tough about taking your meds?”

   - Anchoring strategies

Anchoring Medication to Daily Events

- A daily event (a meal, TV show, bedtime, brushing my teeth) reminds me.

So What to Do?

3. Treatment complexity and costs

   - Simplify if possible
   - Find less expensive solutions

The Kaiser Approach

- Longer Supply of Medication (90 days vs. 30)
- Lower Patient Co-pay / Out-of-Pocket
- On-line Rx Refill
- Automated Phone Reminders
- Mail Order Pharmacy: Saves Time / Improves Adherence

So What to Do?
1. Ask correctly
2. Forgetfulness
3. Treatment complexity and costs
4. Patient-provider trust
   - Listen, listen, listen

So What to Do?
1. Ask correctly
2. Forgetfulness
3. Treatment complexity and costs
4. Patient-provider trust
5. Talk about beliefs about diabetes and medications

Challenging Harmful Beliefs
1. Taking your medications is one of the most powerful things you can do to positively affect your health
2. Your medications are working even if you can’t feel it
3. Needing more medication isn’t your fault
4. More medication doesn’t mean you are sicker, less medication doesn’t mean you are healthier

Take Home Message
What we have missed:
- In a significant number of cases, patients avoid or quit medications because they are trying to be healthy
- Patients and HCPs typically have the same goal (and often the same concerns) in mind, and we must take advantage of that.
Conclusions

Poor medication adherence:
  • ... explains a great deal of the lack of glycemic progress over the past decade
  • ... is commonly an attitudinal issue, not just a behavioral issue.
  • ... is best addressed by considering the patient’s perspective, and encouraging a two-way conversation about the perceived pro's and con's of the medication.