(PBL) Diabetes Treatment Update: After Metformin

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Barbara Keber, MD, FAAFP

Physician, Northwell Health Physician Partners Family Medicine, Glen Cove, New York; Vice Chair/Associate Professor of Family Medicine, Department of Family Medicine, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Hempstead, New York; Chair of Family Medicine, Glen Cove Hospital, New York

Dr. Keber earned her medical degree from the State University of New York (SUNY) Downstate College of Medicine, Brooklyn, and completed her residency in family medicine at the Community Hospital of Glen Cove, New York. She has been a board-certified family physician for 35 years and currently works for Northwell Health Physician Partners Family Medicine at Glen Cove Hospital. For the past five years, the combined faculty and residency practice has had National Committee for Quality Assurance (NCQA) recognition as a Level 3 Patient-Centered Medical Home (PCMH), and Dr. Keber has been instrumental in developing the patient-centered approach and team-based care. In addition, she is the physician leader for the diabetes program in both the inpatient and ambulatory settings. She is currently the physician lead for the Enterprise Diabetes Project for the Northwell Health System, leading efforts to enhance and standardize diabetes care within the enterprise. She has lectured on topics related to diabetes care/management and team-based population health within the PCMH model of care.

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Mary Muscarello, MSN, ANP-C, CDE, CRRN

Nurse Practitioner/Outpatient Diabetes Self-Management Program Coordinator/Inpatient Diabetes Educator, Glen Cove Hospital, New York

Muscarello earned her Bachelor of Science (BS) degree in nursing from Molloy College in Rockville Centre, New York, and her master's degree in adult health from Stony Brook University, New York. For more than 17 years, she has worked for Northwell Health in various positions, including acute rehab, and as a visiting nurse. A board-certified adult nurse practitioner and certified diabetes educator, she currently works in a hospital-based family medicine clinic, specializing in the care of patients who have diabetes. She works with a socioeconomically disadvantaged population, comprised mostly of immigrants from Central America who have limited English proficiency and limited financial resources. Because many of them have never attended school, literacy and numeracy are major challenges for Muscarello's patients. She uses numerous hands-on tools to enhance her patients' understanding of their condition and treatment. She believes that the marriage of evidence-based medicine, shared decision-making, and relationship-based care makes all the difference in successfully getting patients to goal. She has been nominated for and received several awards, including the Northwell Health President's Award for Exceptional Patient/Customer Experience for the Eastern Region.

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Learning Objectives

1. Practice applying new knowledge and skills gained from Diabetes Treatment and Update sessions, through collaborative learning with peers and expert faculty.

2. Identify strategies that foster optimal management of diabetes treatment within the context of professional practice.

3. Formulate an action plan to implement practice changes, aimed at improving patient care.

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Associated Sessions

- Diabetes Treatment Update: After Metformin

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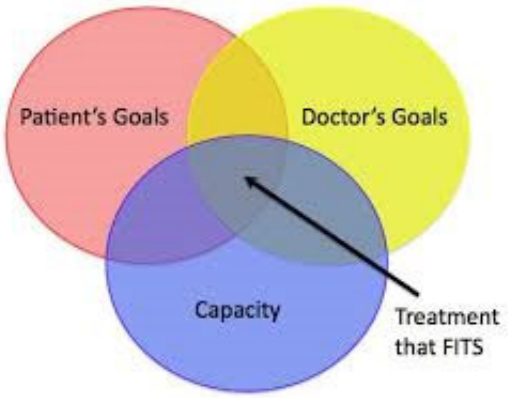
For Your Patients??

We Should Aim for Treatment That Fits



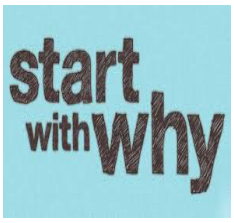
Scary Fact:

Studies have shown that 40-80% of the medical information patients are told in a medical appointment is forgotten immediately, and nearly half of the information that is retained is remembered incorrectly

Providing Patient-Centered Care

- **Important things to consider:**
  - Patient's health beliefs and cultural traditions
  - Literacy and numeration
  - Cognitive and physical abilities
  - Personal preferences and values
  - Family situations and support
  - Patient lifestyle
  - Financial limitations
  - Patient willingness

Adherence



- Lack of perceived severity
- Affordability
- Complexity of regime
- Competing factors
- Hypoglycemia and other side effects
- Using incorrectly
- One and done? Stopping existing med when new med added?

Case 1 JS

- 69 year old male
- Type 2 Diabetes x 13 years
- OSA
- HTN
- Grade 2 Diastolic Heart Failure
- Obesity
- Does not exercise

Medications

- amlodipine 5 mg daily
- aspirin 81 mg daily
- atorvastatin 20 mg daily
- losartan 25 mg daily
- metformin 500 mg BID (unable to tolerate 1,000 mg BID)

Labs

Date	A1C
Sept. 2017	6.6%
Oct. 2018	7.3%
Jan, 2019	8.9%

Na+	139
K+	4.6
Cl-	102
HCO3	24
BUN	14
Creatinine	1.31
Glucose	156
eGFR	69

Blood Glucose Testing at Home

- Rarely tested at home
- Fasting 110-134
- Bedtime 175-230

Small Group Case 1 Discussion

- What if anything would you change?
- What follow up should you do?
- When would you follow up?
- Is there any other team member you want to involve to assist you?

Case 2 MJ

- 54 year old female
- Morbidly obese, BMI 42.5
- Hypertension
- HLD
- Type 2 Diabetes x 5 years
- Lives with spouse and 2 children

Labs

Date	A1C
May 2014	7.2%
Nov. 2017	9.9%
Oct. 2018	8.7%
Feb. 2019	11.2%

BUN	10
Creatinine	0.92
Glucose	224
eGFR	88
Chol	236
HDL	35
LDL	161
Triglycerides	209

Medications

- Metformin 1,000 mg BID
- Lisinopril 20 mg daily
- Amlodipine 5 mg daily
- Refuses statins
- Refusing insulin
- GLP1 Semaglutide 1.5 mg weekly added Oct. 2018

Case 2 MJ Blood Glucose Testing

- Sporadically testing
- Often “forgets”
- Tests on “good” days
- Stops testing when high readings seen
- Range150-325

Small Group Case 2 Discussion

- What do you do next?
- How do you get this patient to understand the issues?
- This patient thinks she can do this with just her diet- how do you convince her this will not correct her blood sugar?
- What points need discussion and who can help you to work with her?

Case 3 JW

- 74 year old male, recently retired, lives alone
- Type 2 Diabetes x 12 years
- HTN, variably controlled
- Overweight, BMI 29.9
- Sedentary due to DJD of hip and recent hip replacement
- Diagnosed with Coronary Artery Disease at age 71
- Irregular eating habits, often skips meals

Labs

Date	A1C
May 2007	7.4%
Dec. 2012	6.9%
Nov. 2018	8.7%

BUN	14
Creatinine	0.88
Glucose	159
eGFR	69
Chol	180
HDL	44
LDL	99
Triglycerides	106

Medication

- Metformin 1,000 mg BID
- Sitagliptin 100 mg daily
- Atorvastatin 20 mg QHS
- Lisinopril 10 mg daily
- Co-Q 10 200 mg QHS
- Vitamin D 2,000 mg daily

BG Testing

- Fasting 120-160
- Only willing to test once daily

Case 3 Group Discussion

- What options are available currently to reduce the A1C?
- What reasons do you have for making a particular choice?
- Is there any other information you want to have before making a decision on the next steps?

STEPS on our Journey

Case 4 LB

- 76 year old, obese (BMI 32) female
- Variably controlled Type 2 x 18 years
- HTN
- HLD
- CAD diagnosed 5 years ago with 2 cardiac stents placed
- 2 additional stents 2 years later

Case 4 Medications

- Metformin 1,000 mg BID
- Sitagliptin 100 mg daily
- Aspirin 81 mg daily
- Atorvastatin 40 mg QHS
- Metoprolol 25 mg BID
- Losartan 50 mg daily

Labs

Date	A1C
Apr. 2002	10.1%
Dec. 2002	7.1%
Dec. 2012	7.4%
July 2015	7.7%
Nov. 2018	8.7%

Lipids	WNL
Glucose	129
eGFR	70

Case 4 Discussion

- What options are currently available to improve the control of her diabetes?
- Why would you choose or not choose a particular agent?
- How much improvement in the A1C do you anticipate with the proposed change?

Summary

- Always assess medication adherence – don't increase meds not taken
- Assess patient willingness for prescribed treatment
- Don't underestimate effectiveness of lifestyle changes
- Always refer for MNT and DSME
- Consider SGLT2 inhibitors (renal and heart failure indications)
- Consider GLP1 RA when weight loss indicated with or without CV disease
- DPP 4 inhibitors- not to be used with GLP1RA – similar mechanism of action and no proven additional benefits for CV disease or renal disease

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Questions

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Referrences

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