Emerging Challenges in Primary Care: 2016

NACE NATIONAL ASSOCIATION FOR CONTINUING EDUCATION

Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

Grant A-18738

Final Outcome Report for 9 Cities

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Course Accreditation

The National Association for Continuing Education is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The National Association for Continuing Education designates this live activity for a maximum of 4.75 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

National Association for Continuing Education is approved as a provider of nurse practitioner continuing education by the American Association of Nurse Practitioners. AANP Provider Number 121222. This program has been approved for 7 contact hours of continuing education (which includes 2.5 pharmacology hours).

Maintenance of Certification: Successful completion of this activity, which includes participation in the evaluation component, enables the participant to earn up to 7 MOC points in the American Board of Internal Medicine's (ABIM) Maintenance of Certification (MOC) program. It is the CME activity providers' responsibility to submit participant completion information to ACCME for the purpose of granting ABIM MOC credit.

Through the American Board of Medical Specialties ("ABMS") and Association of American Medical Colleges' ("AAMC") joint initiative (ABMS MOC Directory) to create a wide array of Maintenance of Certification ("MOC") Activities, Emerging Challenges in Primary Care has met the MOC requirements as a MOC Part II CME Activity by the following ABMS Member Boards: American Board of Family Medicine and American Board of Preventive Medicine.*

* This applies to the full day CME activity entitled Emerging Challenges in Primary Care.

Commercial Support

The Emerging Challenges in Primary Care: Update 2016 series of CME activities were supported through educational grants or donations from the following companies:

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Shire

Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control an educational grant from Lilly. For further information concerning Lilly grant funding visit www.lillygrantoffice.com.

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Cities and Dates

Emerging Challenges in Primary Care: Update 2016
Conference Schedule

April 30, 2016 **Miami, FL**	**June 18 ,2016*** **Raleigh, NC**	September 17, 2016 Fort. Lauderdale, FL
May 7, 2016 **Baltimore, MD**	**June 25, 2016** **Tampa, FL**	September 24, 2016 San Antonio, TX
May 14, 2016 **St. Louis**	**August 13, 2016*** **Denver, CO**	October 8, 2016 Uniondale, NY
May 21, 2016* **Atlanta, GA**	August 20, 2016 Sacramento, CA	October 15, 2016 Nashville, TN
June 4, 2016 **Birmingham, AL**	August 27, 2016 Troy, MI	October 22, 2016 San Diego, CA
June 11, 2016 **Columbus, OH**	September 10, 2016 Anaheim, CA	October 29, 2016 Houston, TX

***Simulcast and Live Conference**

** **Bolded** cities are where the lecture was given

Enduring Webcast launch date – November 1, 2016 – October 31, 2017

Titles of Presentations

The Critical Role of Primary Care in Pulmonary Arterial Hypertension:
Diagnostic and Management Strategies to Improve Outcomes

Applying the Latest Advances and Evidence of Clinical Outcomes to Individualize Heart Failure Treatment – Part I

Applying the Latest Advances and Evidence of Clinical Outcomes to Individualize Heart Failure Treatment: A Case Based Discussion – Part II

Strategies of Care in OAB: Individualizing Treatment Based on Patient Profile

Prostate Cancer Screening in the Primary Care Setting:
Understanding the Role of Bio-Markers

Evolving Strategies of Care in Diabetes:
The Role and Rationale of Glucoretic Therapy

Using GLP-1 Receptor Agonists:
A Better Path For Postprandial Glycemic Control

Evolving Strategies for Cardiovascular Risk Reduction: Beyond Statin Therapy

Strategies for Diagnosis and Treatment of Adult ADHD in Primary Care

Levels of Evaluation

Consistent with the policies of the ACCME, NACE evaluates the effectiveness of all CME activities using a systematic process based on Moore's model. This outcome study reaches Level 5.

- Level 1: Participation
- Level 2: Satisfaction
- Level 3: Declarative and Procedural Knowledge
- Level 4: Competence
- Level 5: Performance
- Level 6: Patient Health
- Level 7: Community Health

Moore DE Jr, Green JS, Gallis HA. Achieving desired results and improved outcomes: integrating planning and assessment throughout learning activities.J Contin Educ Health Prof. 2009 Winter;29(1):1-15

Level 1: Participation

- 2649 attendees in 9 cities (1975 On Site, 674 Remote Simulcast)
- 36% Physicians; 58% NPs or PAs; 5% RNs;1% Other
- 47% in community-based practice
- 70% PCPs, 4% Cardiologist; 2% Endocrinologist; 24% Other or did not respond
- 92% provide direct patient care

Did we reach the right audience? Yes!

Participation by Location

	MDs/DOs	NPs	PAs	RNs	Other	TOTAL
Miami, FL April 30, 2016	106	144	10	11	5	**276**
Baltimore, MD May 7, 2016	122	129	6	6	4	**267**
St. Louis, MO May 14, 2016	107	48	7	3	2	**167**
Atlanta, GA May 21, 2016	118	240	16	8	74	**456**
Birmingham, AL June 4, 2016	77	110	1	8	4	**200**
Columbus, OH June 11, 2016	65	19	1	0	0	**85**
Raleigh, NC June 18, 2016	139	287	30	10	14	**480**
Tampa, FL June 25, 2016	132	134	9	17	8	**300**
Denver, CO August 13, 2016	97	223	73	17	8	**418**

Level 2: Satisfaction

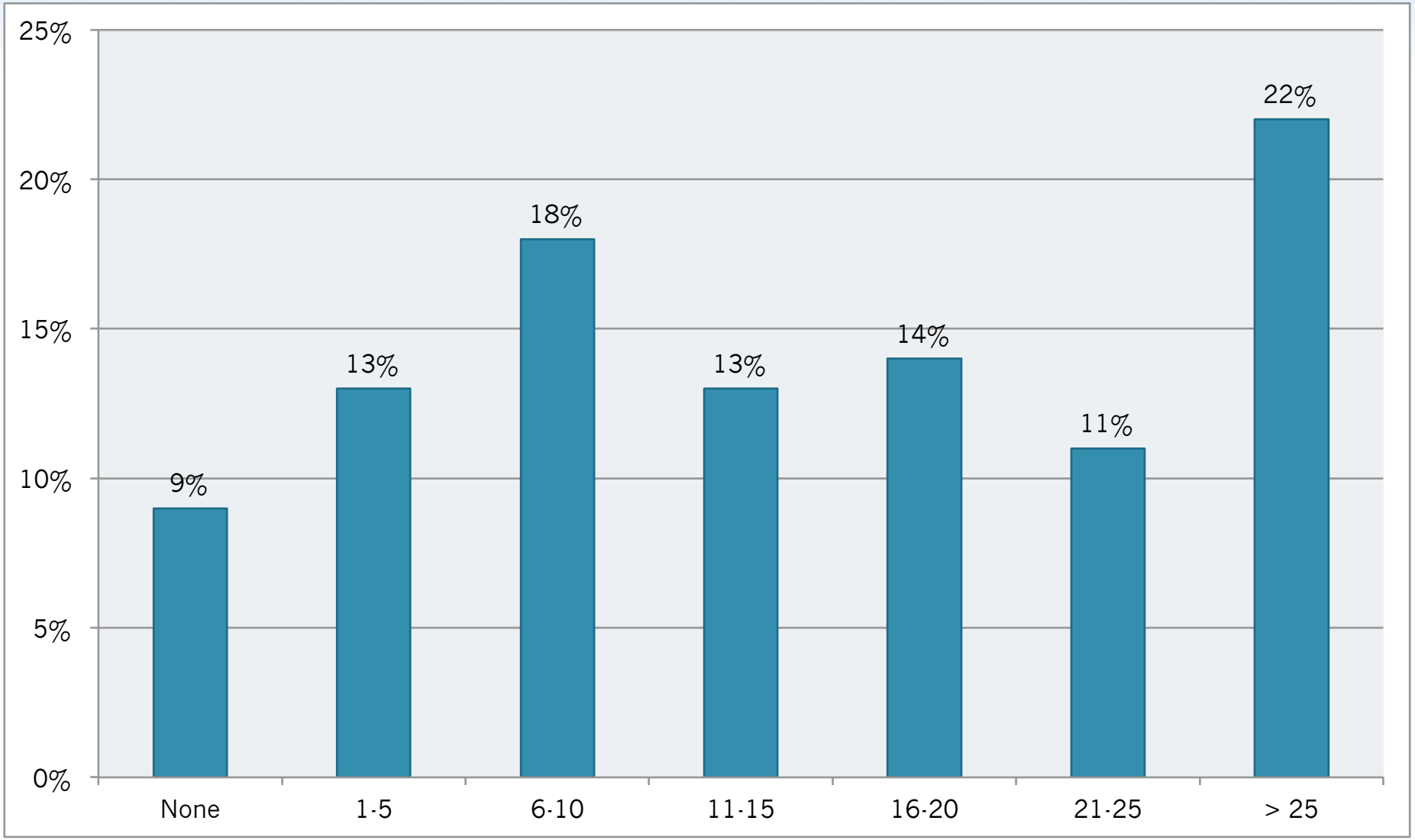
- 97% rated the activity as excellent
- 99% indicated the activity improved their knowledge
- 96% stated that they learned new and useful strategies for patient care
- 91% said they would implement new strategies that they learned in their practice
- 100% said the program was fair-balanced and unbiased

Sample Size: N = approximately 2649

Were our learners satisfied? Yes! Data was collected across nine cities for the Emerging Challenges in Primary Care program.

Transition to Insulin Therapy:
Breaking the Barriers to Better Glycemic Control

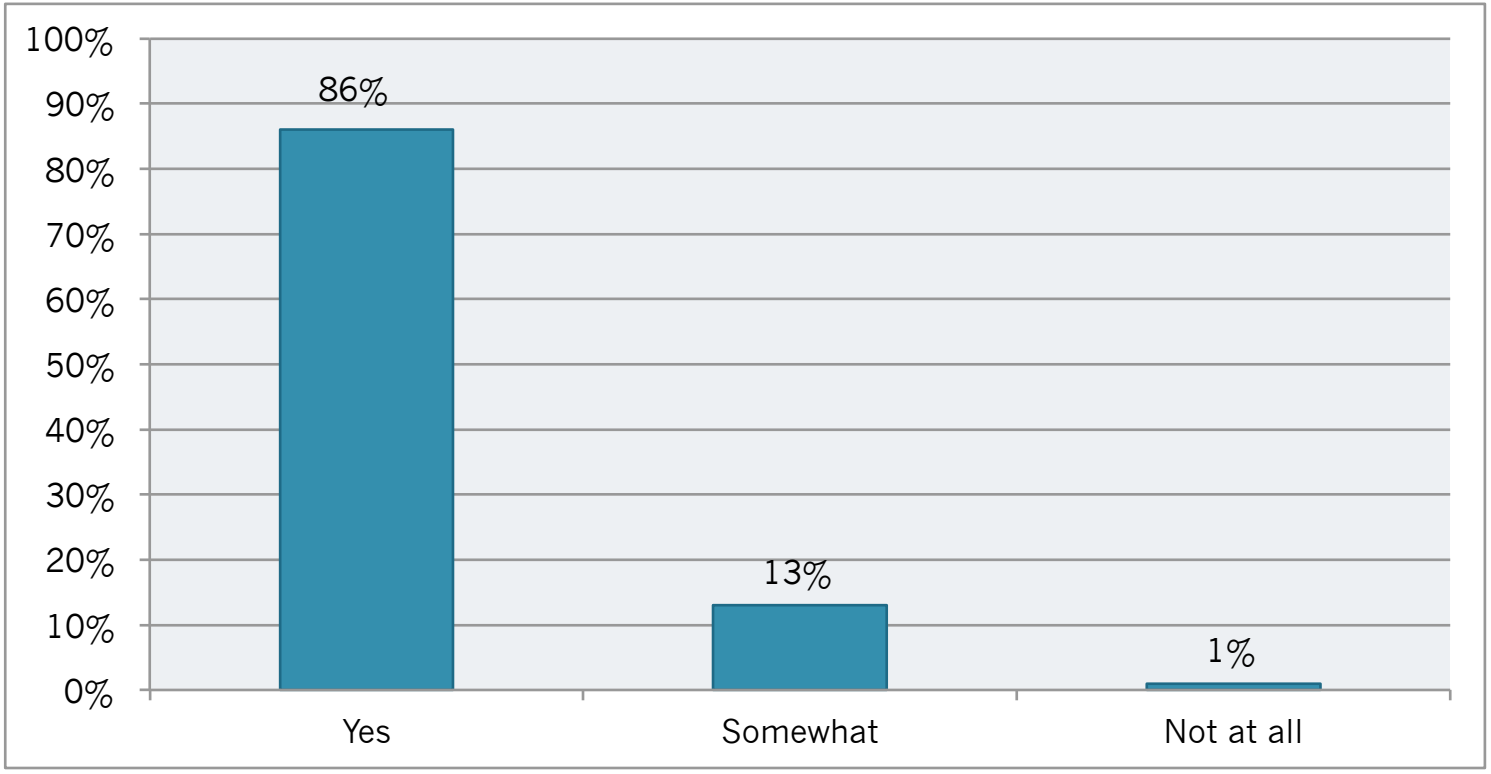
Patients seen each week in a clinical setting with diabetes:



Sample Size: N = approximately 2649

Did Learners Say They Achieved Learning Objective?

Upon completion of this activity, I can now –Recognize the role of postprandial hyperglycemia in type 2 diabetes (T2DM) patients not at target and examine its role in the pathogenesis of diabetic complications; Utilize glucagon-like peptide (GLP)-1 receptor agonist (GLP-1 RA) therapy to address post-prandial hyperglycemia in ways current fixed dose strategies do not; Compare GLP-1 RAs for glycemic efficacy and differential impact on postprandial glycemic control; Discuss various GLP-1 RA combination strategies to effectively control fasting and post-prandial hyperglycemia:



Yes! 99% believed they did. Data was collected in 9 cities.

Sample Size: N = approximately 2649

Outcome Study Methodology

Goal

To determine the effect this CME activity had on learners with respect to competence to apply critical knowledge, confidence in treating patients with diseases or conditions discussed, and change in practice behavior.

Dependent Variables

1. **Level 3-5: Knowledge, Competence, and Performance**

   Case-based vignettes and pre- and post-test knowledge questions were asked with each session in the CME activity. Identical questions were also asked to a sample of attendees 4 weeks after the program to assess retention of knowledge. Responses can demonstrate learning and competence in applying critical knowledge. The use of case vignettes for this purpose has considerable predictive value. Vignettes, or written case simulations, have been widely used as indicators of actual practice behavior. [1]

2. **Practitioner Confidence**

   Confidence with the information relates directly to the likeliness of actively using knowledge. Practitioner confidence in his/her ability to diagnose and treat a disease or condition can affect practice behavior patterns.

3. **Level 5: Self-Reported Change in Practice Behavior**

   Four weeks after CME activity, practitioners are asked if they changed practice behavior.

1. Peabody, J.W., J. Luck, P. Glassman, S. Jain, J. Hansen, M. Spell and M. Lee (2004). Measuring the quality of physician practice by using clinical vignettes: a prospective validation study. Ann Intern Med14(10): 771-80.

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Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

Faculty

Richard Beaser, MD
Robert Busch, MD, FACE
Louis Kuritzky, MD
Mark Stolar, MD
Jeff Unger, MD, ABFM, FACE

Learning Objectives

1. Recognize the role of postprandial hyperglycemia in type 2 diabetes (T2DM) patients not at target and examine its role in the pathogenesis of diabetic complications.

2. Utilize glucagon-like peptide (GLP)-1 receptor agonist (GLP-1 RA) therapy to address post-prandial hyperglycemia in ways current fixed dose strategies do not.

3. Compare GLP-1 RAs for glycemic efficacy and differential impact on postprandial glycemic control.

4. Discuss various GLP-1 RA combination strategies to effectively control fasting and post-prandial hyperglycemia

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Key Findings

Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

Knowledge/Competence	Learners demonstrated improvement from pre to post-testing in their answers to *four* out of *four* of the case-based questions regarding approach to treating patients with diabetes.
Confidence	Whereas the majority of learners rated themselves as having moderate confidence in their understanding of treating patients with diabetes before the education, most of the learners showed significant gains in confidence after the program.
Intent to Perform	As a result of this program, 84% of learners now state that they will, often or always, consider the effect of antihyperglycemic medications on postprandial glucose levels, compared to 51% prior to the program. This persisted at 4 weeks.
Change of Practice Behavior 4 Weeks Post N= 89	91% of learners who responded to our four week survey indicated that they had changed their practice behavior to implement the learning objectives of this program within four weeks after they attended the activity.

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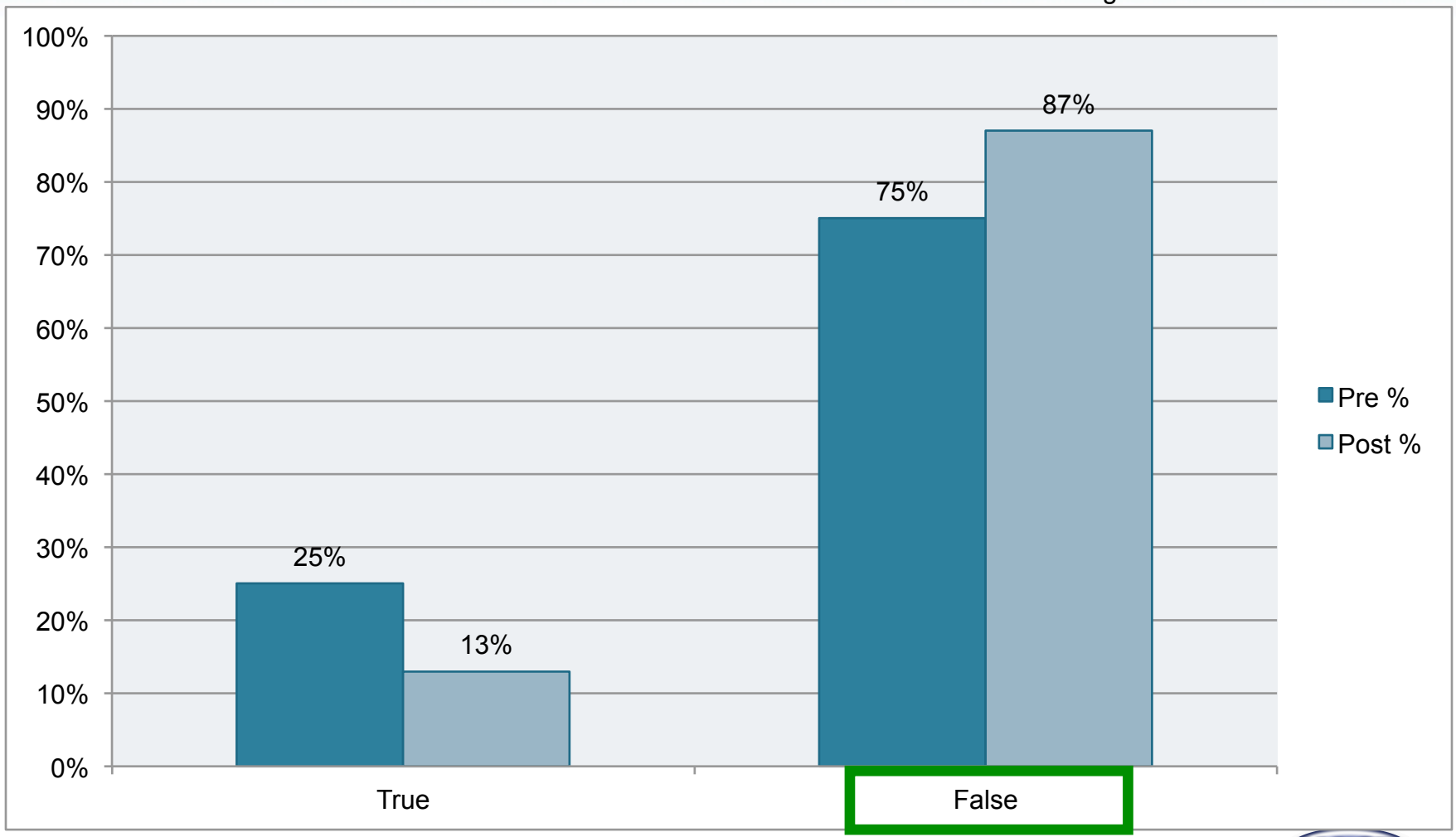
Case Vignette Knowledge and Competence Assessment Questions

(presented before and after lecture—boxed answer is correct)

According to analysis of the Baltimore Longitudinal Aging study, risk for all-cause mortality increases with rising fasting blood glucose levels above 110 mg/dL, but not with postprandial blood glucose levels above 180 mg/dL. **True or False?** (Learning Objective 1)

P Value: <0.001 – Significant



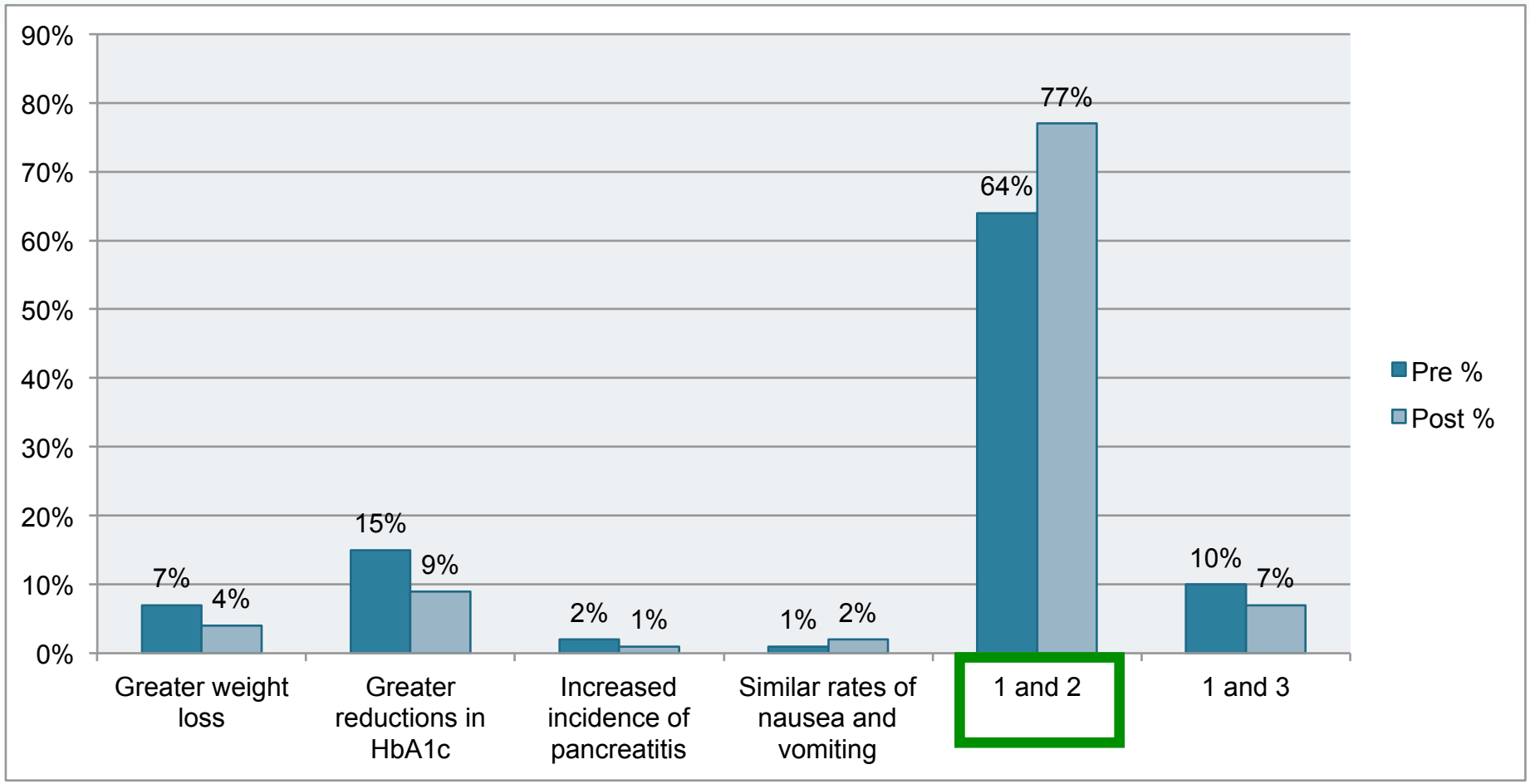
Pre N = 1229 Post N = 1386

Green highlight indicates significant difference between pre and post testing.

Case Vignette Knowledge and Competence Assessment Questions
(presented before and after lecture—boxed answer is correct)

Which of the following would you expect when comparing the addition of a GLP-1RA vs DPP4 to patients already taking metformin? (Learning Objective 2)

P Value: <0.001 – Significant



Pre N = 1238 Post N = 1459

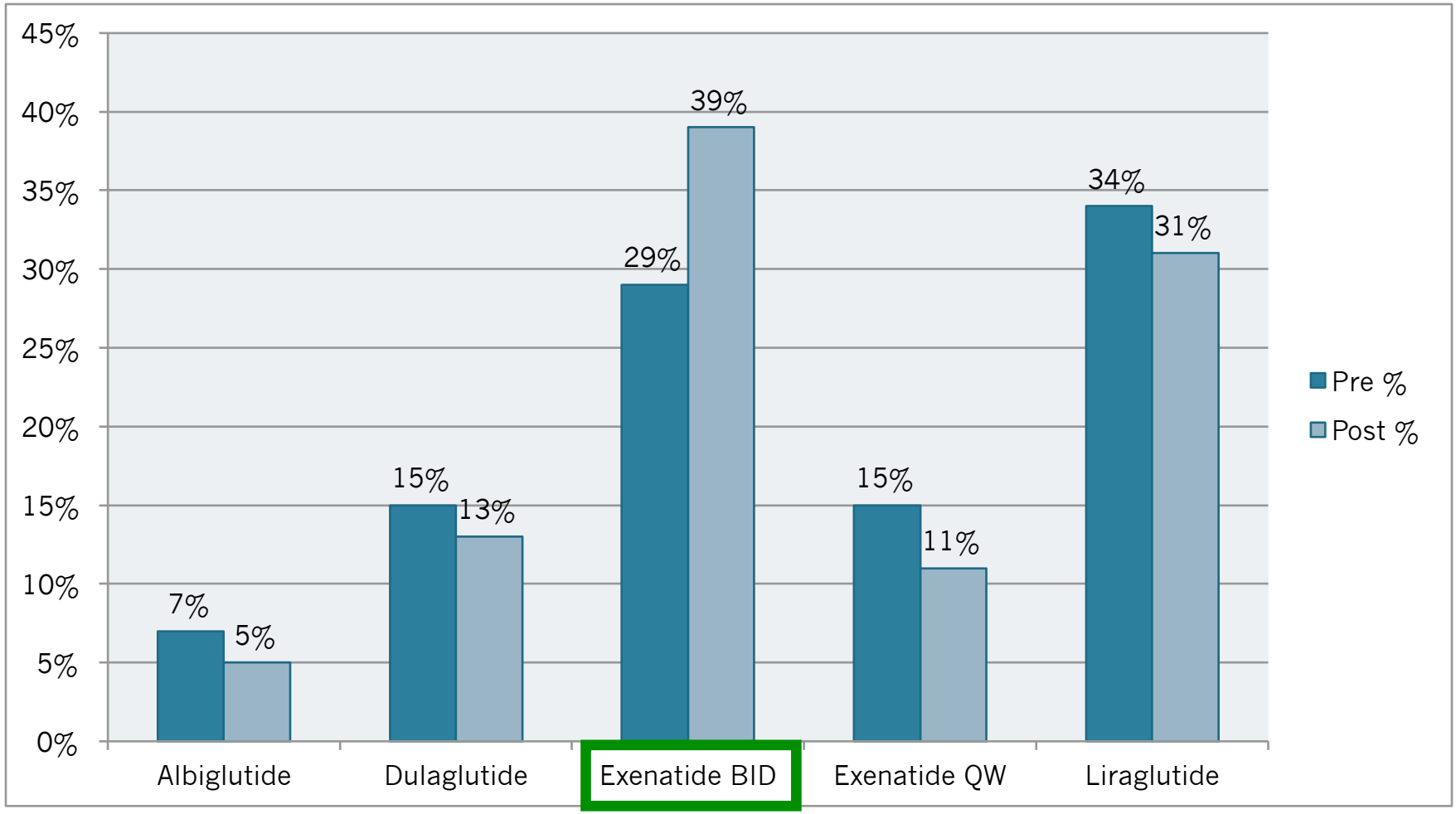
Green highlight indicates significant difference between pre and post testing.

Case Vignette Knowledge and Competence Assessment Questions

(presented before and after lecture—boxed answer is correct)

Although no direct head to head comparisons have been made, which of the following agents appears to have the greatest effect on post prandial glucose lowering
(Learning Objective 2 and 3)

P Value: <0.001 – Significant



Pre N = 1275 Post N = 1412

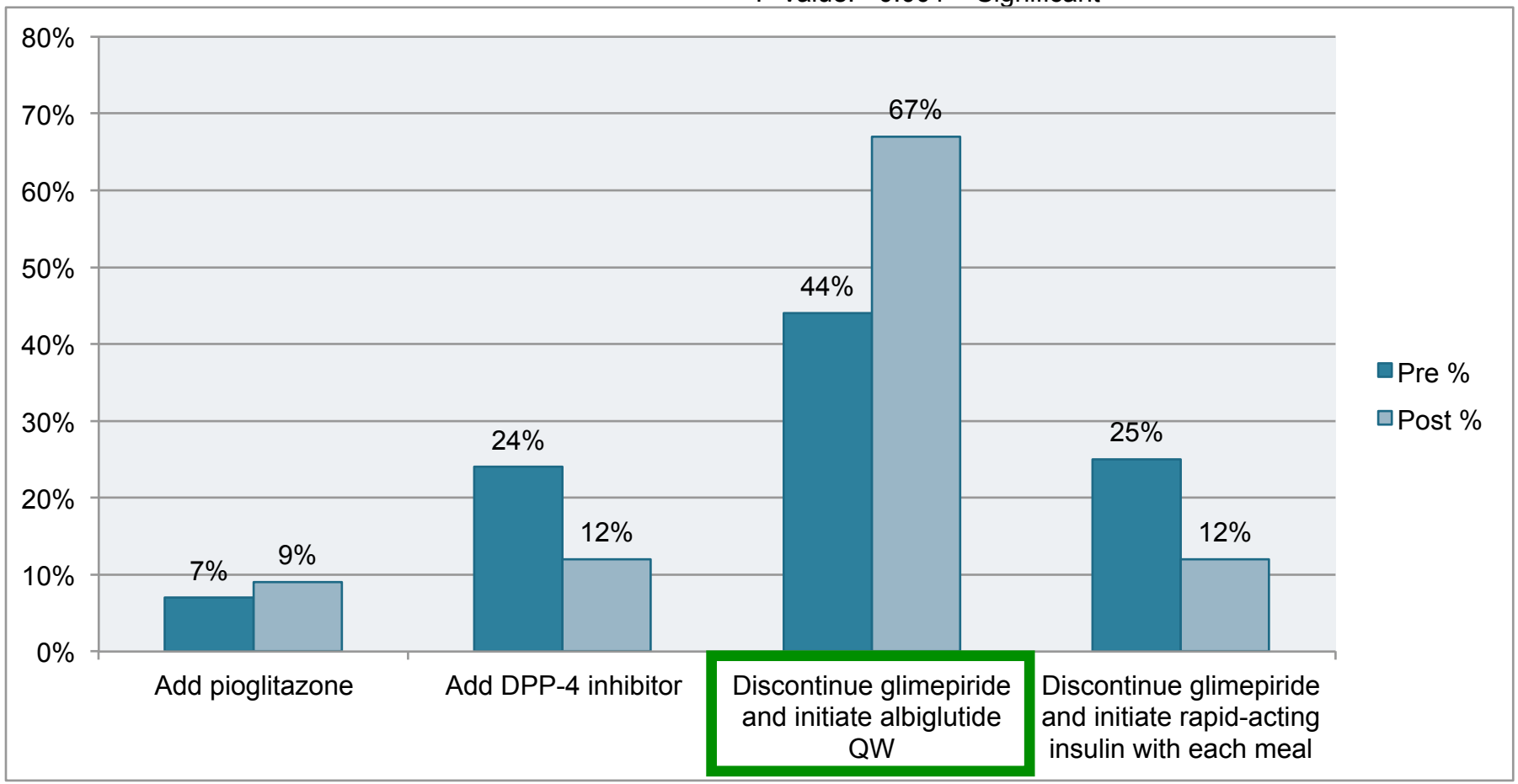
Green highlight indicates significant difference between pre and post testing.

Case Vignette Knowledge and Competence Assessment Questions

(presented before and after lecture—boxed answer is correct)

A 56-year-old man with an 11-year history of type 2 diabetes presents for a checkup. Current medications include metformin 1000 mg bid, glimepiride 4 mg qd, and insulin detemir 60 U at night. His HbA1c is 8.1% and fasting blood glucose 150 mg/dL. According to clinical trial results, which of the following is most likely to lower his post-prandial glucose the most without significant hypoglycemia?
(Learning Objectives 2,3,4)

P Value: <0.001 – Significant

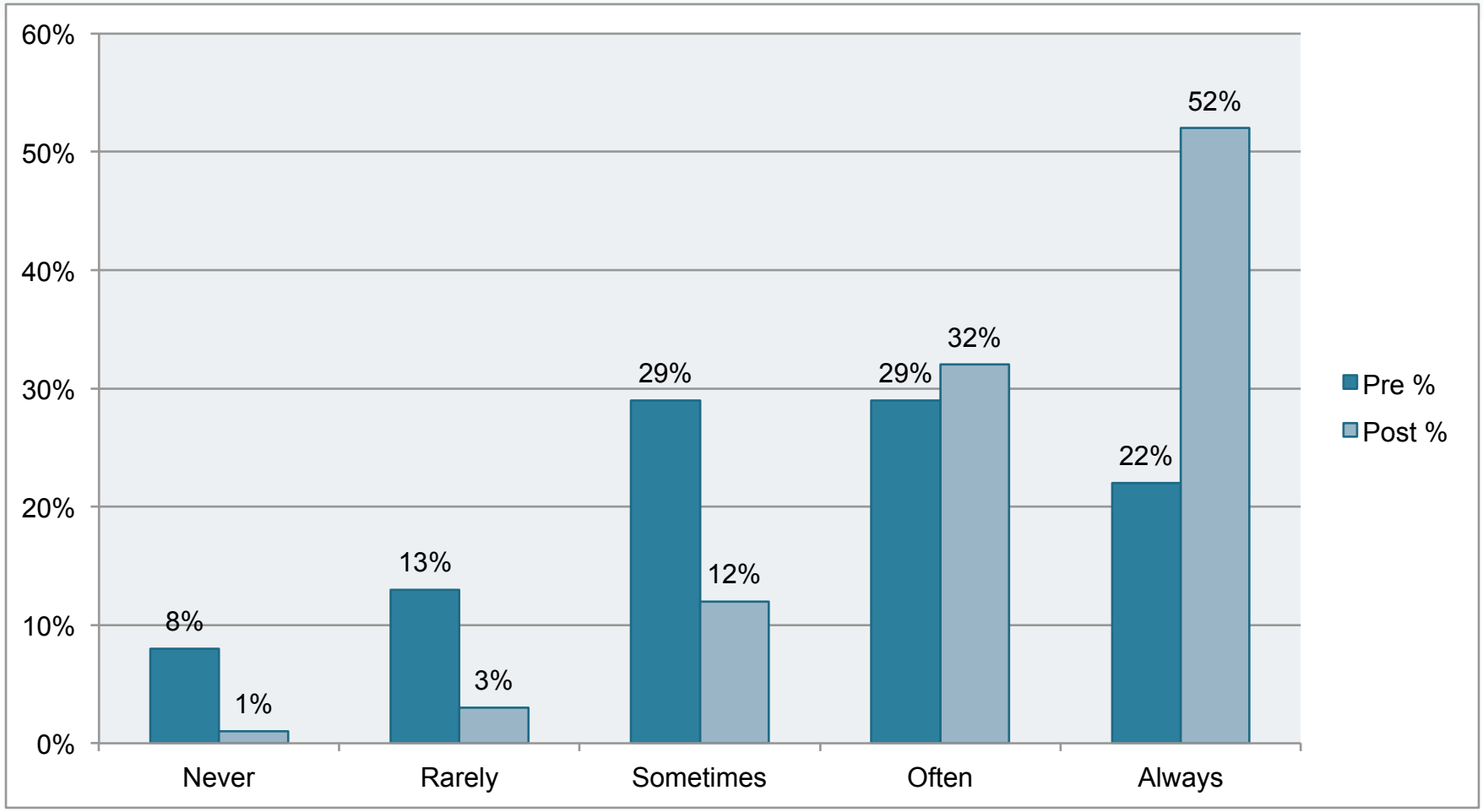


Pre N = 1303 Post N = 1299

Green highlight indicates significant difference between pre and post testing.

Practice Assessment Questions
(presented before and after lecture)

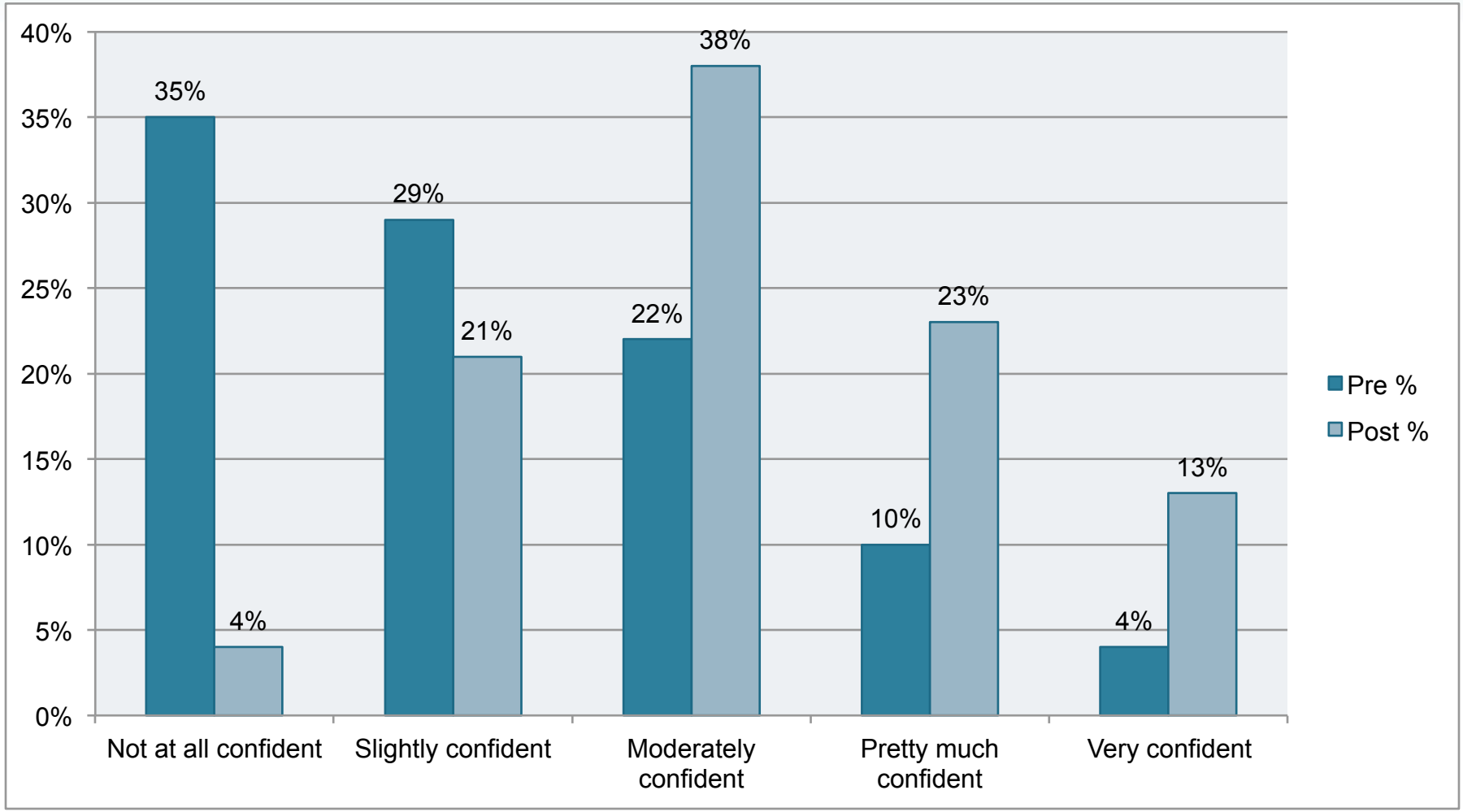
When adjusting therapy in patients with type 2 diabetes, how often do/will you consider the effect of antihyperglycemic medications on postprandial glucose levels: (Learning Objective 1)



Pre N = 1299 Post N = 1375

Transition to Insulin Therapy: Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

Please rate your confidence in your ability to use GLP-1RAs in combination with other antihyperglycemic medications:

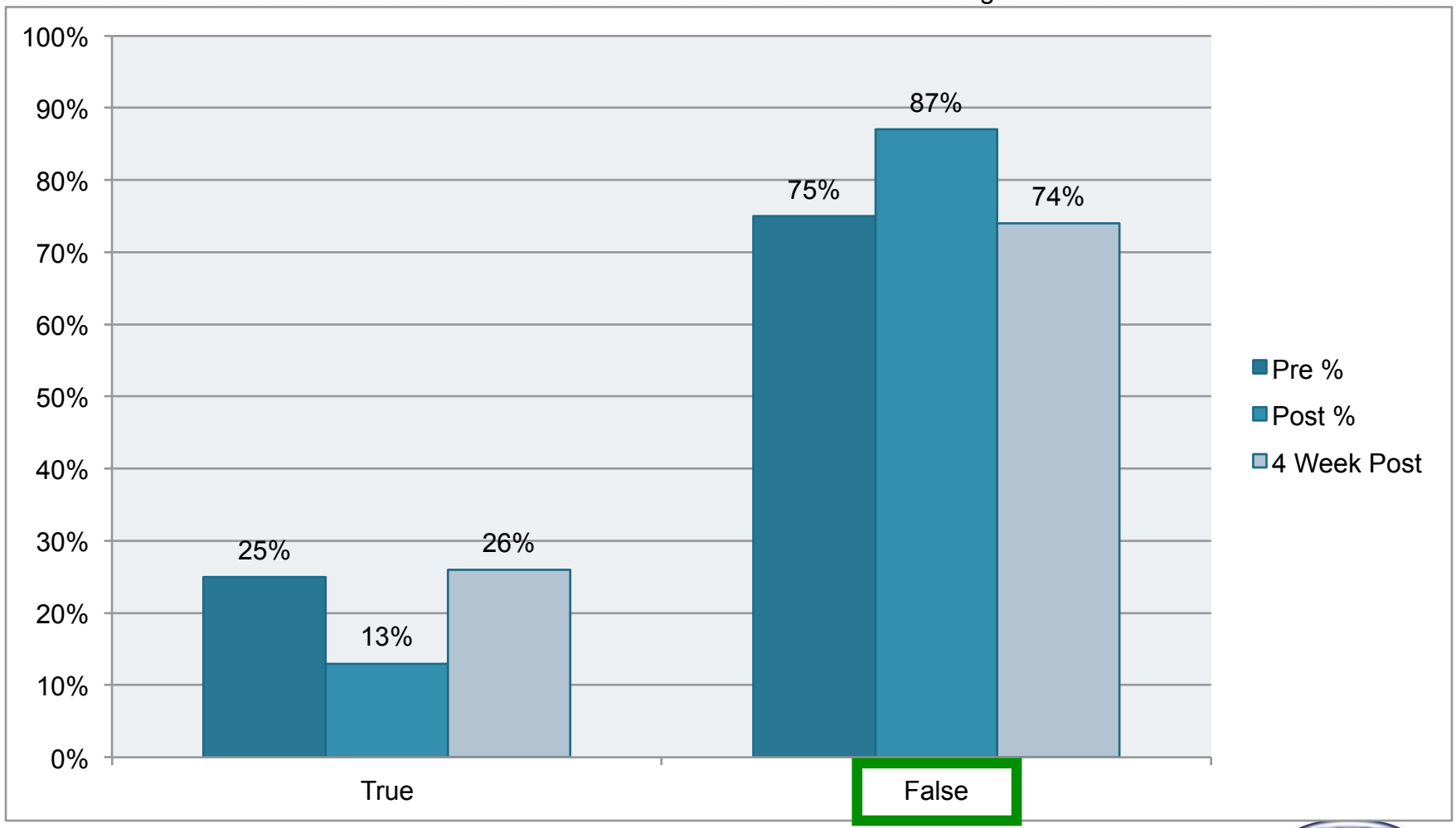


Pre N = 1376 Post N = 1538

Four Week Case Study Questions
(boxed answer is correct)

According to analysis of the Baltimore Longitudinal Aging study, risk for all-cause mortality increases with rising fasting blood glucose levels above 110 mg/dL, but not with postprandial blood glucose levels above 180 mg/dL. **True or False?** (Learning Objective 1)

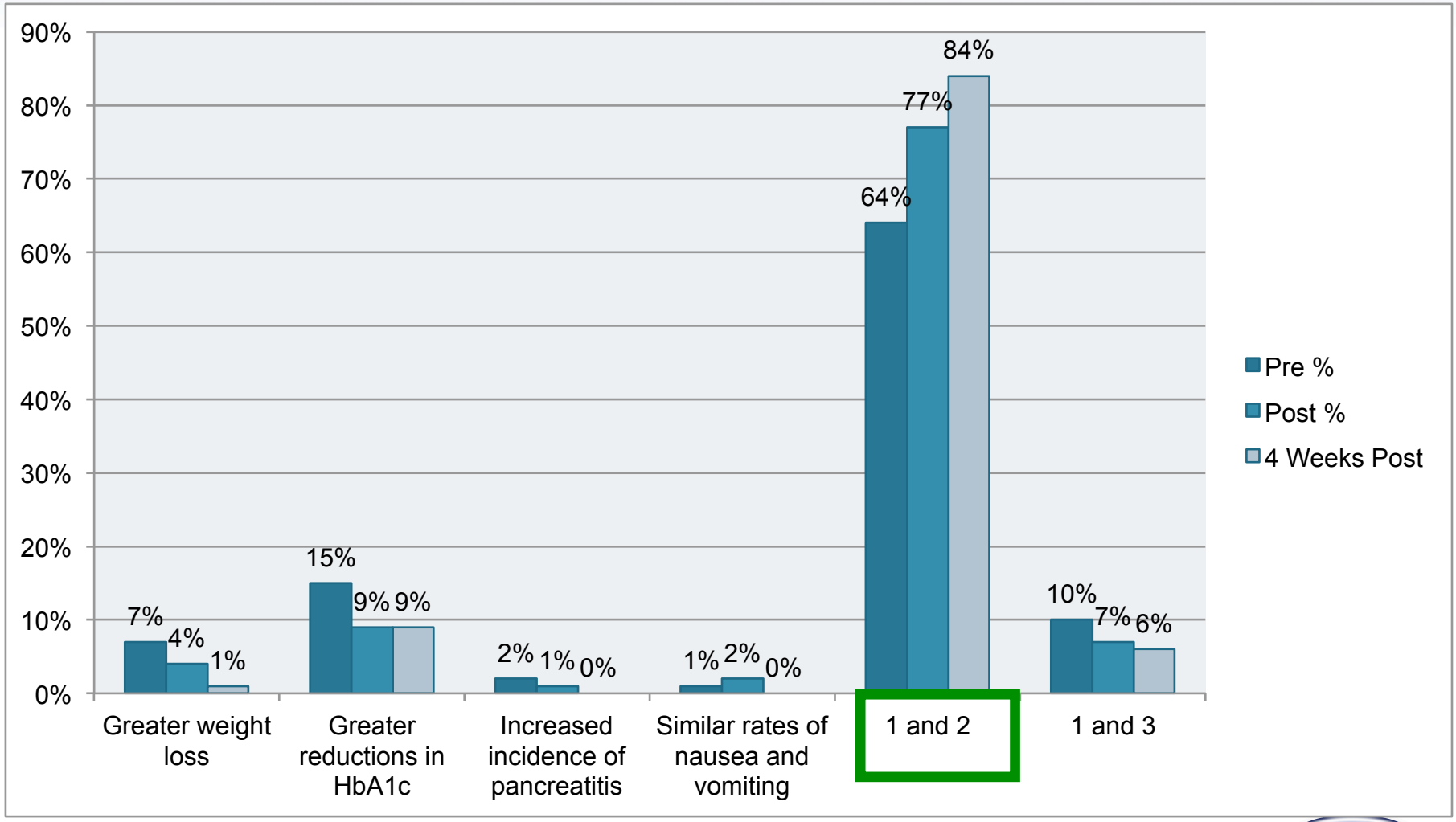
P Value: <0.001 – Significant



Pre N = 1229 Post N = 1386 4 Weeks Post N = 89 Green highlight indicates significant difference between pre and post testing.

Four Week Case Study Questions
(boxed answer is correct)

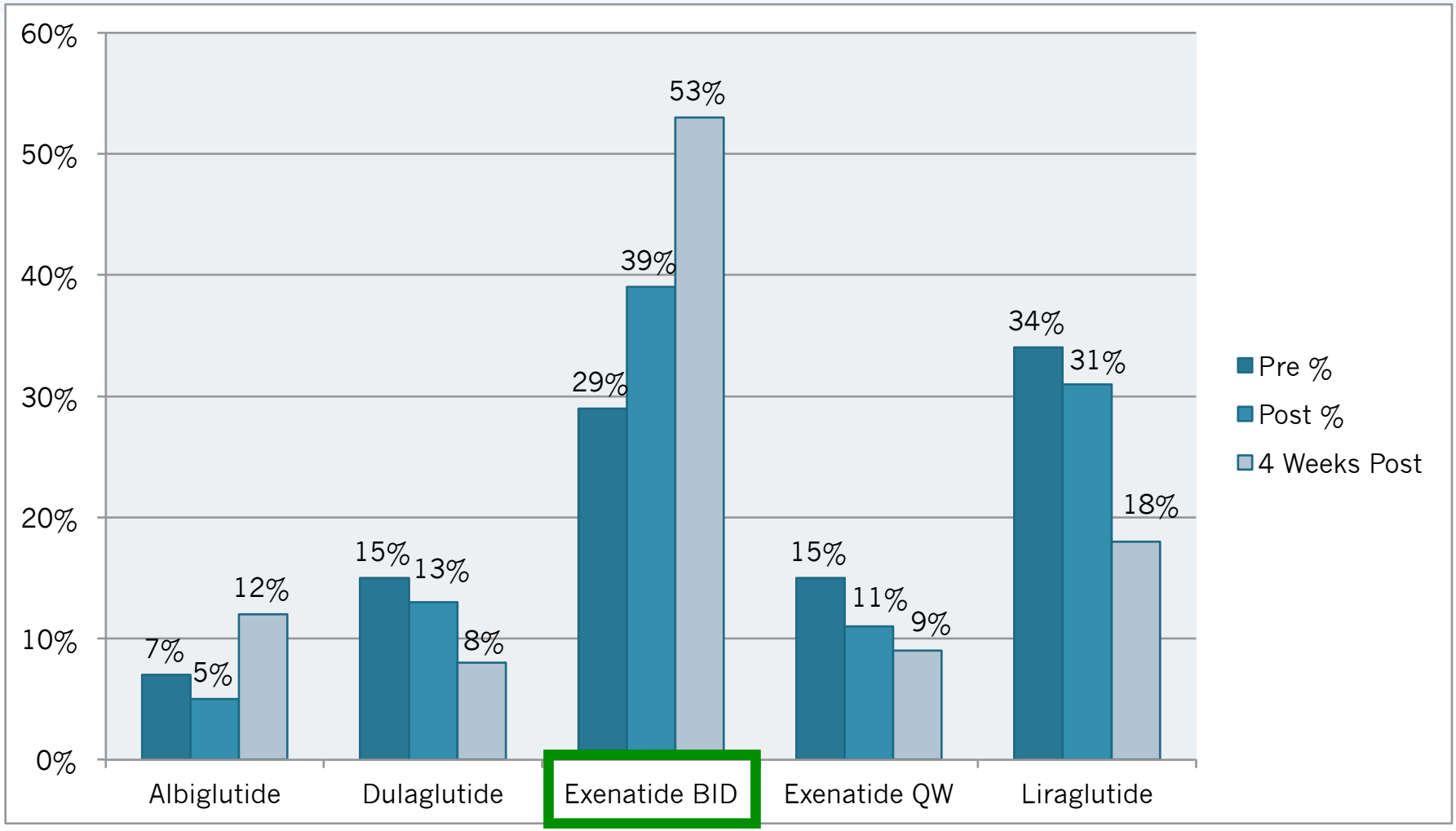
Which of the following would you expect when comparing the addition of a GLP-1RA vs DPP4 to patients already taking metformin? (Learning Objective 2)



Pre N = 1238 Post N = 1459 4 Weeks Post N = 89 Green highlight indicates significant difference between pre and post testing.

Four Week Case Study Questions
(boxed answer is correct)

Although no direct head to head comparisons have been made, which of the following agents appears to have the greatest effect on post prandial glucose lowering
(Learning Objective 2 and 3)

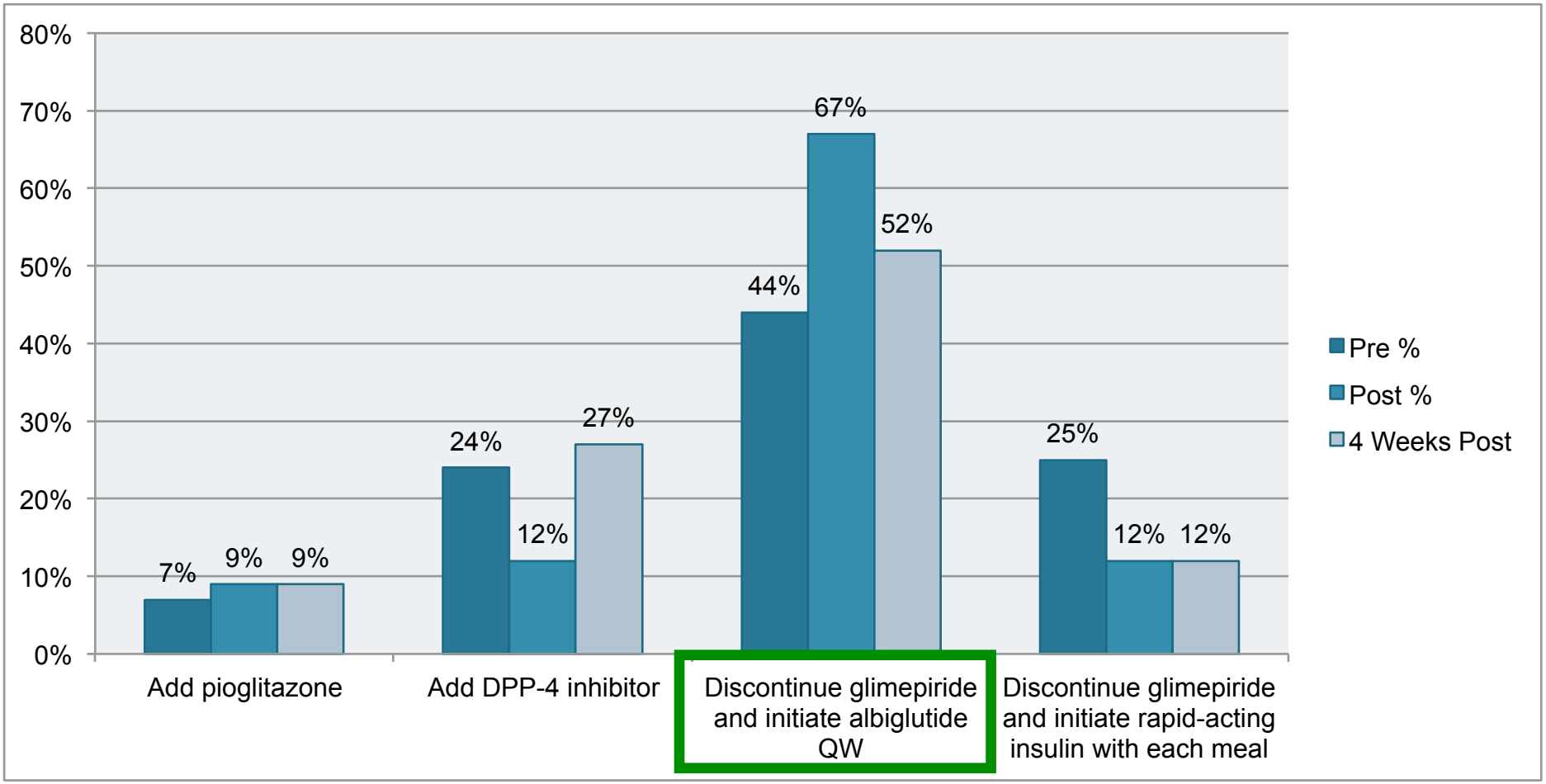


Pre N = 1275 Post N = 1412 4 Weeks Post N = 89 Green highlight indicates significant difference between pre and post testing.

Four Week Case Study Questions

(boxed answer is correct)

A 56-year-old man with an 11-year history of type 2 diabetes presents for a checkup. Current medications include metformin 1000 mg bid, glimepiride 4 mg qd, and insulin detemir 60 U at night. His HbA1c is 8.1% and fasting blood glucose 150 mg/dL. According to clinical trial results, which of the following is most likely to lower his post-prandial glucose the most without significant hypoglycemia?
(Learning Objective 2,3,4)

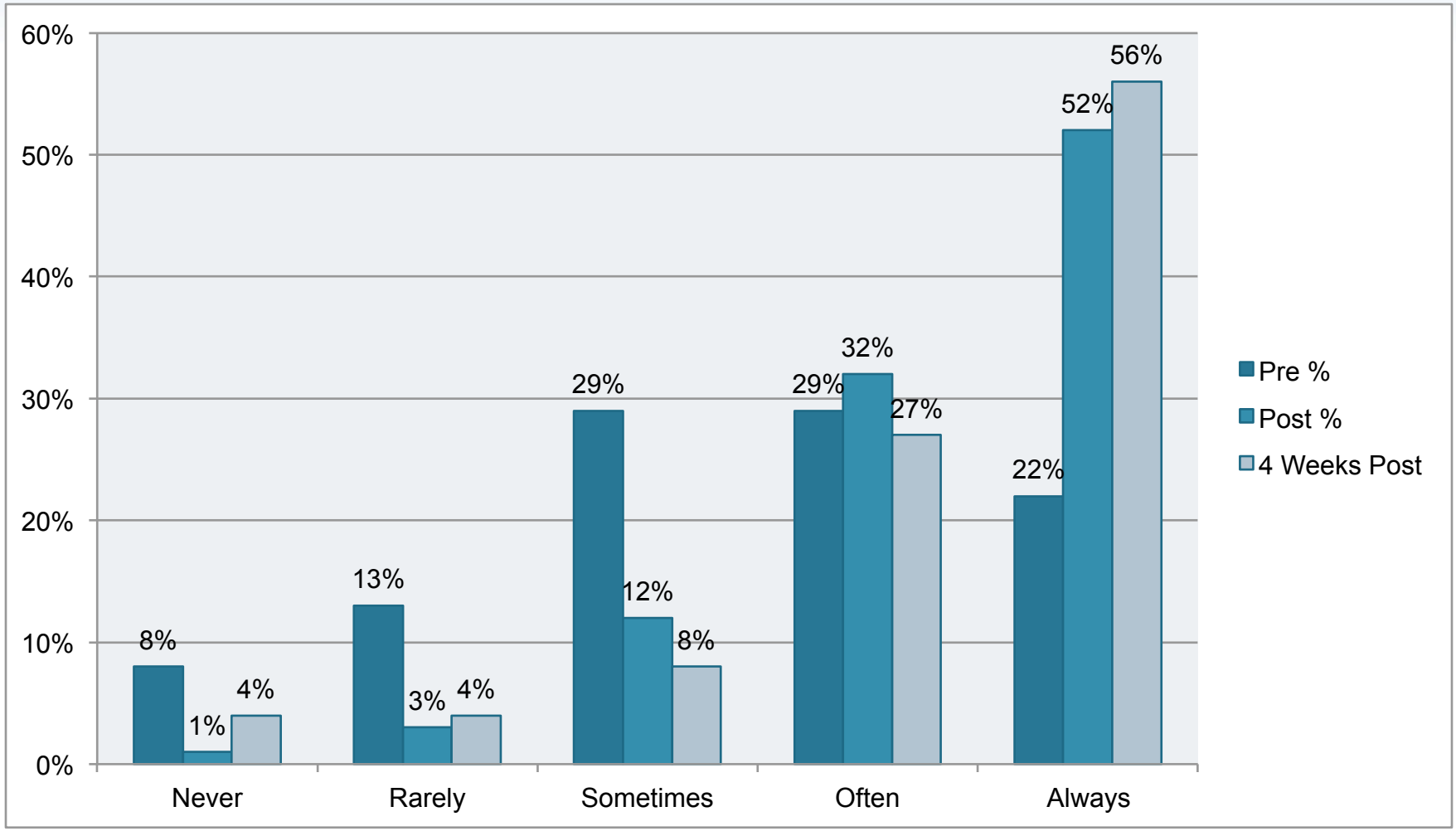


Pre N = 1303 Post N = 1299 4 Weeks Post N = 89 Green highlight indicates significant difference between pre and post testing.

Practice Assessment Questions

(presented before and after lecture and again 4 weeks after the lecture)

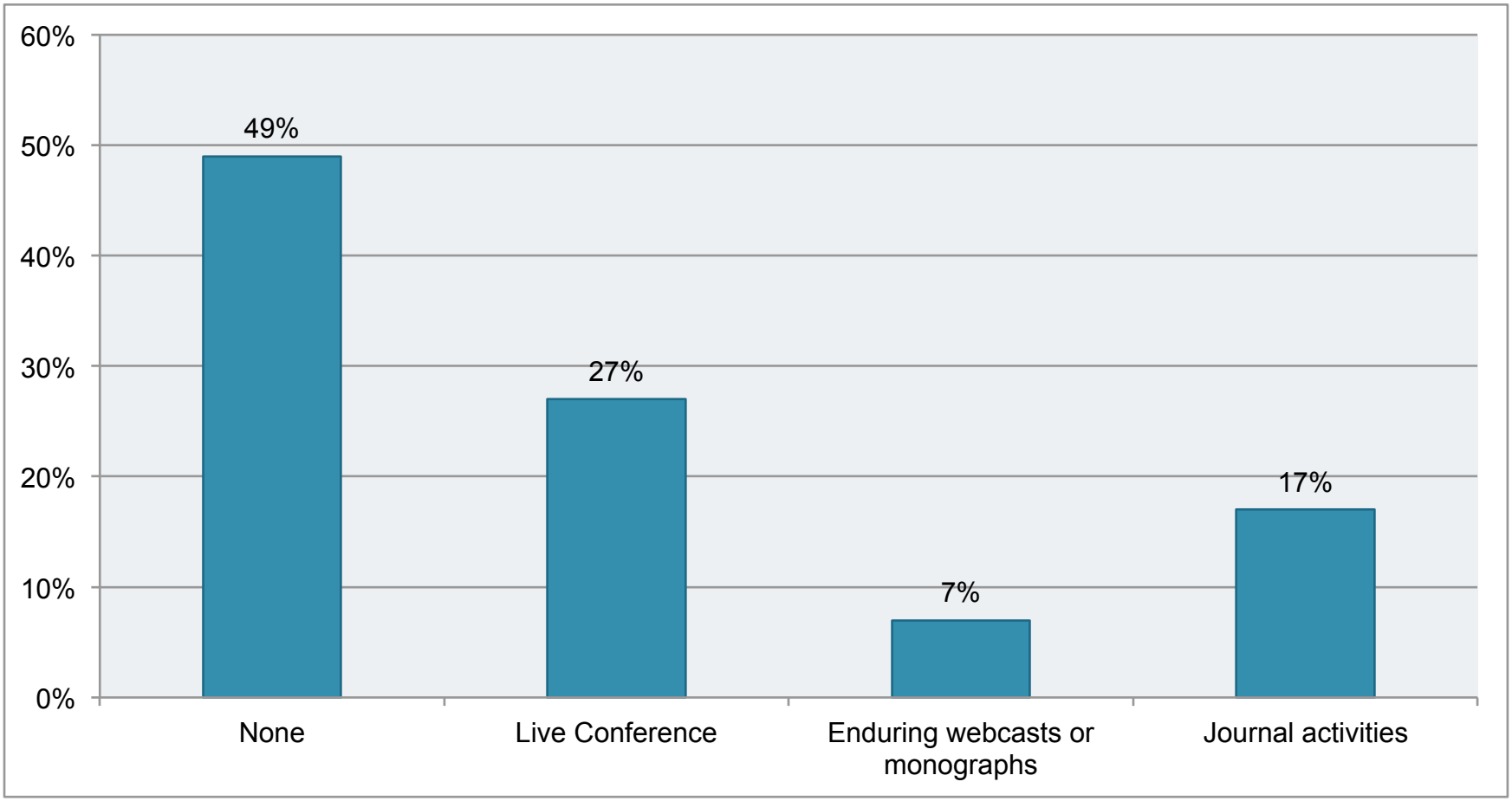
When adjusting therapy in patients with type 2 diabetes, how often will/do you consider the effect of antihyperglycemic medications on postprandial glucose levels: (Learning Objective 1)



Pre N = 1299 Post N = 1375 4 Weeks Post N = 89

Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

Describe/list any other educational activities that you attended in the last month concerning the treatment of diabetes?



4 Weeks Post N= 89

Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

What specific skills or practice behaviors have you implemented for patients with diabetes since this CME activity?
(Comments received from attendees at 4 week follow up)

- Increased use of GLP-1 RAs
- Choosing the right meds for the right patients
- Follow up very closely with each patient
- Paying more attention to postprandial BS
- Monitoring post-prandial blood sugars when adjusting Rx
- Monitor patient A1C level and medicine
- Being more conscious of diabetic patients
- Use more GLP-1 RA sooner than before to reduce post prandial blood sugar
- Improved awareness of the importance of postprandial hyperglycemia in patients with diabetes mellitus
- More frequent checking of the postprandial blood sugars in patients with diabetes mellitus who are on diabetic medications
- Using combinations of basal insulin and glp-1 analogs to control fasting blood sugars and postprandial blood sugars in patients with diabetes mellitus

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Using GLP-1 Receptor Agonists:
A Better Path For Postprandial Glycemic Control

What specific barriers have you encountered that may have prevented you from successfully implementing strategies for patients with diabetes since this CME activity? (Comments received from attendees at 4 week follow up)

- Cost
- Patient's motivation
- Medication on the formulary, restricting what can be used
- Insurance problems, trouble getting approvals
- Cost and availability
- Patient education
- Access to prescribing
- Insurance approval
- Many patients still do not like to have injectable medicine
- Set glucose monitoring/schedules in long term care facilities
- Insurance coverage/ cost

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Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

Data Interpretation: 2649 clinicians in 9 meetings

Recognize that the risk for all cause mortality rises when post-prandial blood sugars rise above 180 mg/dL

Understand that the addition of a GLP-1RA vs DPP4 to patients already taking metformin is likely to promote greater weight loss and greater reductions in A1C

Participant Educational Gains

Are more aware that a twice daily short acting GLP1-RA appears to have a greater effect on post-prandial glucose lowering than other longer acting daily or weekly options

Realize that in a patient with an HbA1c of 8.1% on metformin, glimepiride and insulin detemir, switching glimepiride to a weekly GLP-1 RA is most likely to lower a patient's post-prandial glucose the most, without significant hypoglycemia.

Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

Persistent Educational Gap After 4 Weeks

- Recognizing the increased mortality risk in post-prandial hyperglycemia
- Pharmacologic differences of different GLP-1 RAs
- Appropriate strategies of care to reach glycemic targets while minimizing hypoglycemia risk

Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

New Specific Behaviors Reported at 4 weeks

- Greater use of GLP1-RAs
- More attention being paid to post prandial glucose
- Selecting pharmacotherapy according to patient physiologic needs
- Closer follow up of patients with diabetes
- Combining basal insulin and GLP-1 RAs to control fasting blood sugars and postprandial blood sugars

Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

Reported Barriers to Care at 4 weeks

- Cost of medications
- Patient compliance
- Formulary issues
- Patient fear of injectables
- Patient education

Using GLP-1 Receptor Agonists: A Better Path For Postprandial Glycemic Control

Data Interpretation: 2649 clinicians in 9 meetings

64% increase in participants considering the effect of antihyperglycemic medications on postprandial glucose levels

94% improvement in confidence levels in the ability to use GLP-1RAs in combination with other antihyperglycemic medications rose

KEY TAKE HOME POINTS

91% of participants are likely to utilize information learned from this presentation in their practice

22% of attendees report seeing 25 or more patients with Diabetes weekly; 60% see > than 10, suggesting significant number of patients impacted

Discussion and Implications

Using GLP-1 Receptor Agonists:
A Better Path For Postprandial Glycemic Control

The need for continued education in the area of Diabetes and the effective use of GLP-1 Receptor Agonists, was demonstrated based on literature reviews and surveys completed prior to the conference series. Attendee knowledge was assessed at 3 points for this program: prior to the lecture, immediately following the lecture and again at 4 weeks after the conference using the case vignettes listed above.

Data Interpretation:

Data collected from 2649 clinicians after 9 meetings, indicated a statistically significant improvement in knowledge in all 4 of the questions presented. Specifically, as a result of this lecture, participants:

1. Recognize that the risk for all cause mortality rises when post-prandial blood sugars rise above 180 mg/dL;
2. Understand that the addition of a GLP-1RA vs DPP4 to patients already taking metformin is likely to promote greater weight loss and greater reductions in A1C;
3. Are more aware that twice daily Exenatide appears to have a greater effect on post-prandial glucose lowering than other longer acting daily or weekly options;
4. Realize that in a patient with an HbA1c of 8.1% on metformin, glimepiride and insulin detemir, switching glimepiride to a weekly GLP-1 RA is most likely to lower a patient's post-prandial glucose the most, without significant hypoglycemia.

51% of learners prior to the program stated that they often or always, consider the effect of antihyperglycemic medications on postprandial glucose levels, while 84% said they would do this afterwards. Moderate to very confident levels in the ability to use GLP-1RAs in combination with other antihyperglycemic medications rose from 38 to 74%.

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Discussion and Implications

Using GLP-1 Receptor Agonists:
A Better Path For Postprandial Glycemic Control

Data obtained from participants 4 weeks after the program demonstrated some decline in learning from the post-test scores in 2 areas, but continued improvement from pre-test scores in the remaining 3 areas. These results suggest that nearly all of the learning objectives for this activity were effectively addressed with attendees.

Persistent gaps in knowledge were evident with additional education needed in the following areas:

1. Recognizing the increased mortality risk in post-prandial hyperglycemia
2. Pharmacologic differences of different GLP-1 RAs
3. Appropriate strategies of care to reach glycemic targets while minimizing hypoglycemia risk

91% of participants are likely to utilize information learned from this presentation in their practice. 22% of attendees report seeing 25 or more patients with Diabetes on a weekly basis and 60% are seeing more than 10, suggesting a significant number of patients will be impacted by this program.

Attendees indicated multiple new, specific, practice behaviors they implemented as a result of this program that included:

1. Greater use of GLP1-RAs
2. More attention being paid to post prandial glucose
3. Selecting pharmacotherapy according to patient physiologic needs
4. Closer follow up of patients with diabetes
5. Combining basal insulin and glp-1 analogs to control fasting blood sugars and postprandial blood sugars

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Discussion and Implications

Using GLP-1 Receptor Agonists:
A Better Path For Postprandial Glycemic Control

Barriers to care included:

1. Cost of medications
2. Patient compliance
3. Formulary issues
4. Patient fear of injectables
5. Patient education.

The notable changes in post test scores, and intent to change practice patterns regarding the use of GLP-1 Receptor Agonists in the management of diabetes signifies a clear gap in knowledge and an unmet need among primary care clinicians. It continues to be an important area for future educational programs.