Dulaglutide has Higher Adherence and Persistence than Semaglutide and Exenatide QW: 6-month Follow-up from US Real-World Data

Reema Mody[1], Maria Yu[1],Bal Nepal[2],Manige Konig[1], Michael Grabner[2]

[1]Eli Lilly and Company, Indianapolis, USA, [2]HealthCore Inc., Wilmington, USA

PRESENTER DISCLOSURE

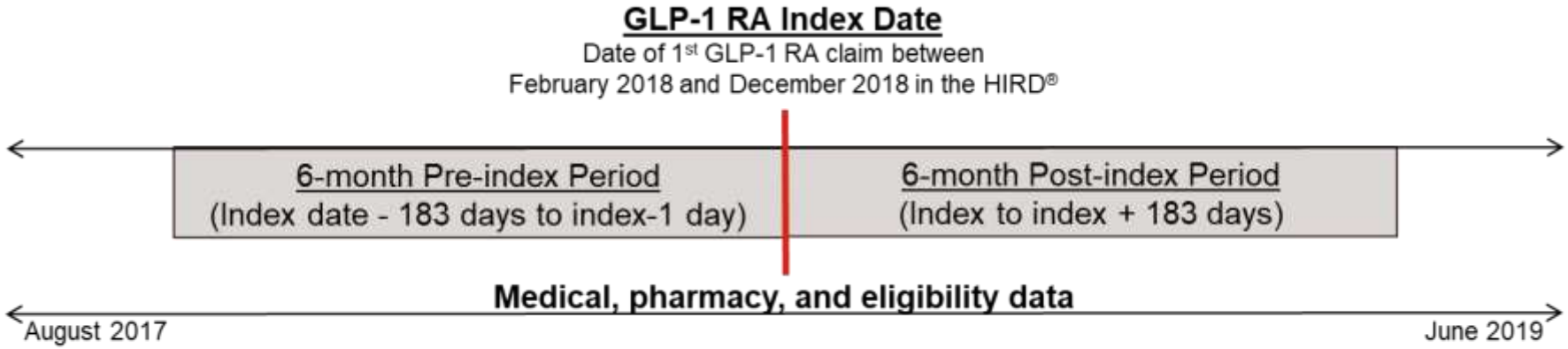
Reema Mody

Employee of Eli Lilly and owns stock in the company.

OBJECTIVE

The objective of this retrospective real-world observational study was to compare 6-month adherence and persistence among patients initiating once-weekly glucagon-like peptide-1 receptor agonists (GLP-1 RAs), dulaglutide vs semaglutide or dulaglutide vs exenatide BCise pen, in the US.

STUDY DESIGN



Key Inclusion and Exclusion Criteria

- Included patients (age ≥18 years) with T2D initiating once weekly dulaglutide, semaglutide, or exenatide BCise from the HIRD®
- Excluded patients with claim for any GLP-1 RA, or fixed combination of GLP-1 RA and insulin anytime, diagnosis of secondary diabetes or T1D during the 6-month pre index period

Outcome Measures

- Adherence measured by proportion of days covered (PDC), defined as the number of days with drug on-hand divided by the number of days in the specified time interval (6-month follow-up period for this study); adherent patients were those with PDC ≥80%
- Persistence measured by length of continuous therapy; persistent patients were those with continuous therapy from the point of initiation until the end of the follow-up period, allowing for a maximum gap of 45 or 60 days from the date the previous fill's supply ran out to the next fill

Statistical Methods

- Propensity score, defined as probability of being initiated with index drug, was calculated using logistic regression with relevant demographics and baseline characteristics as factors. Propensity score 1-1 matching was used to adjust for treatment selection bias
- Kaplan-Meier plot and Cox Proportional Hazard model were used to examine medication persistence

Abbreviations: GLP-1 RA = glucagon-like peptide-1 receptor agonist; HIRD = HealthCore Integrated Research Database; T1D = type 1 diabetes; T2D = type 2 diabetes

BASELINE CHARACTERISTICS POST-MATCHING

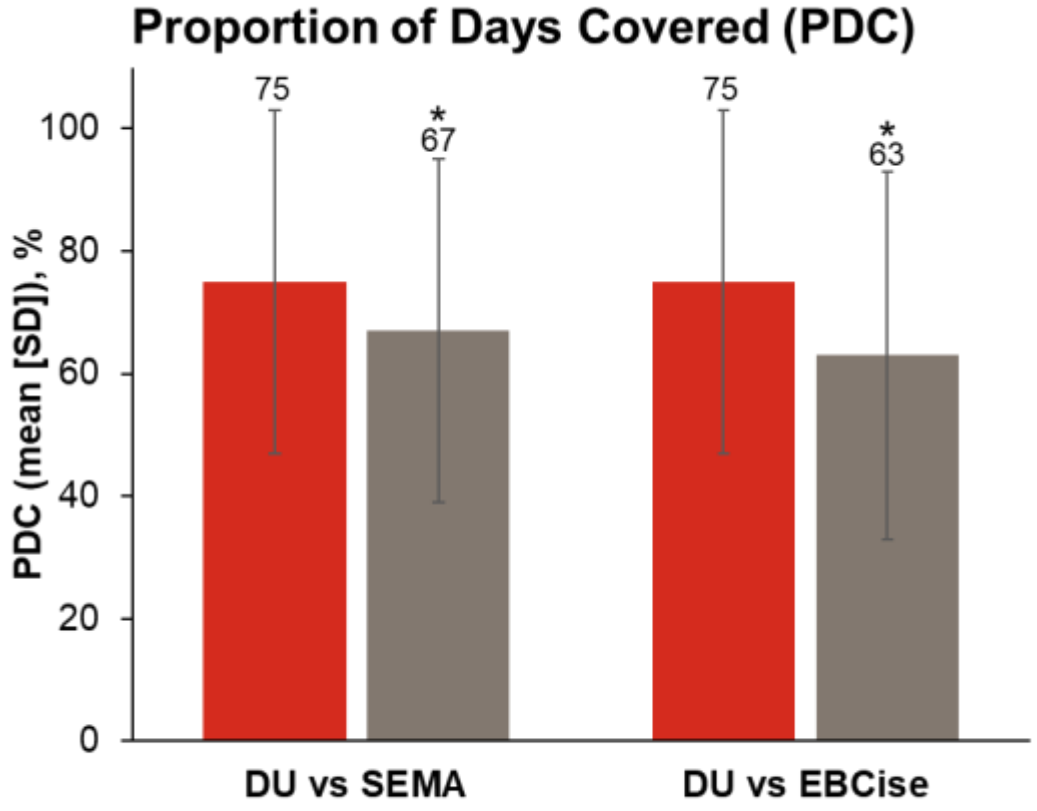
Characteristics	Matched DU (N = 3,852)	Matched SEMA (N = 3,852)	Std. Diff	Matched DU (N = 1,879)	Matched EBCise (N = 1,879)	Std. Diff
Sex, Female (%)[a]	51.6	50.9	0.01	48.4	48.4	0.00
Age, years, Mean (SD)[a]	53.5 (9.8)	53.6 (9.6)	0.01	54.8 (10.1)	54.8 (10.2)	0.00
aDCSI score, Mean (SD)[b]	0.9 (1.3)	0.8 (1.3)	0.05	0.9 (1.3)	0.8 (1.3)	0.05
Selected comorbidities (%)[b]						
Cardiovascular diseases	14.1	14.1	0.00	14.7	14.7	0.00
Dyslipidemia	71.8	73.5	0.04	70.7	73.6	0.06
Hypertension	73.1	73.9	0.02	74.0	73.0	0.02
Obesity	36.9	38.2	0.03	30.8	31.1	0.01
Antidiabetic medication use (%)[b]						
Insulin	31.9	32.1	0.00	29.9	28.6	0.03
SGLT2 inhibitors	27.1	29.2	0.05	24.3	26.3	0.05
DPP-4 inhibitors	26.5	25.4	0.03	25.6	25.8	0.00

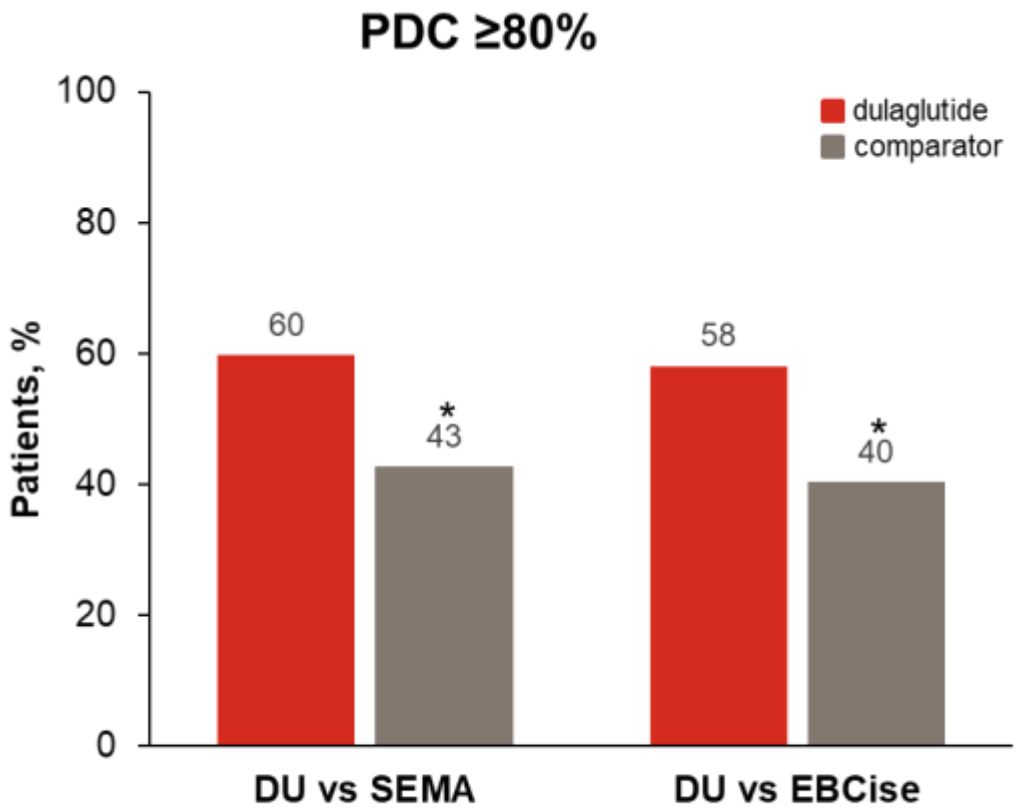
[a]Demographic characteristics were evaluated on index date; [b]Clinical characteristics were assessed over the 6 month pre-index period. Abbreviations: aDSCI = adapted Diabetes Complications Severity Index; DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; DU = dulaglutide; EBCise = exenatide BCise; SGLT2 = sodium-glucose co-transporter-2; Std. Diff=Standardized difference. Std. diff of ≤0.10 was used to indicate cohort balance.

The two propensity score matched cohorts were well balanced for dulaglutide vs semaglutide and dulaglutide vs exenatide BCise comparisons.

KEY RESULT

At 6 months follow-up, patients initiating dulaglutide had significantly higher medication adherence and a greater proportion of adherent patients compared to patients initiating semaglutide or exenatide BCise





*p<0.001 vs dulaglutide from t-test (continuous) or chi-square(categorical). Adherent patients were those with PDC ≥80%. Abbreviations: DU = dulaglutide; EBCise = exenatide BCise; PDC = proportion of days covered; SD = standard deviation; SEMA = semaglutide

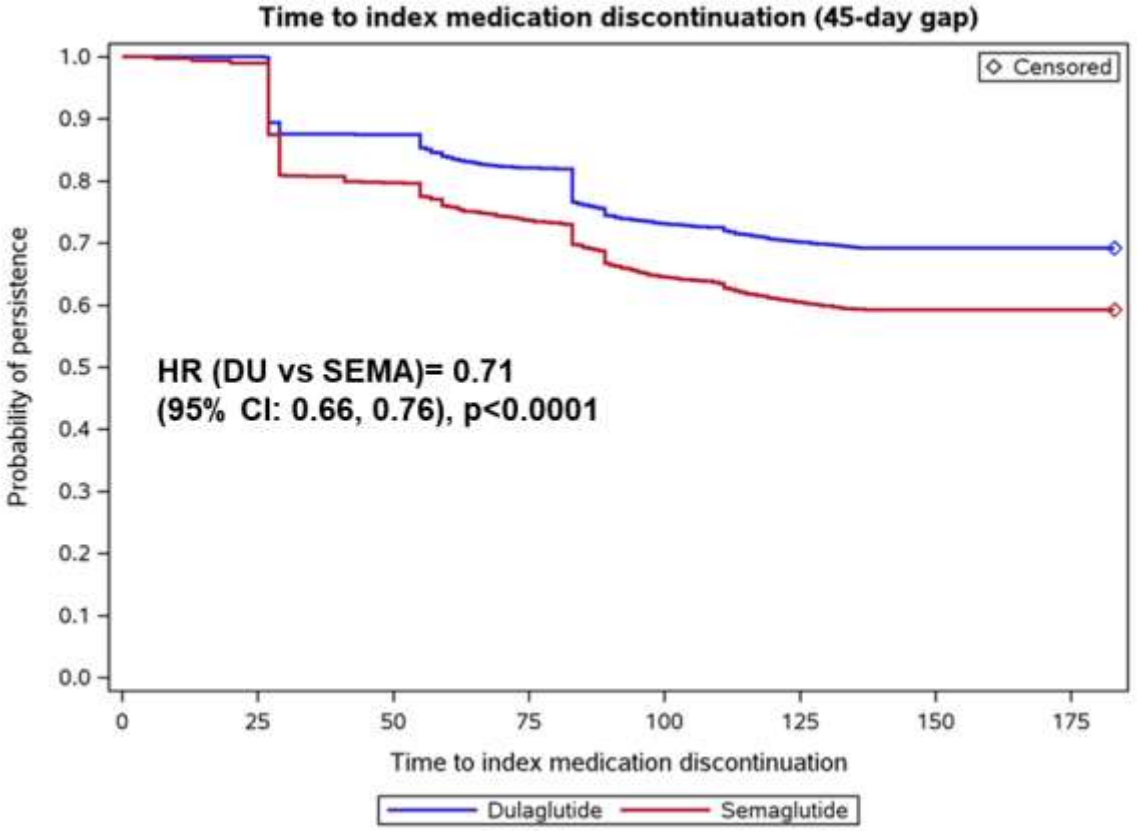
ADHERENCE BY SUBGROUPS

At 6 months follow-up, the % adherent in different patient subgroups were higher with dulaglutide compared to patients initiating semaglutide or exenatide BCise

Subgroups	DU Initiators		SEMA Initiators		DU Initiators		EBCise Initiators	
	N	Adherent	N	Adherent	N	Adherent	N	Adherent
Age								
<65 years	3,492	59.5%	3,492	42.8%	1,614	58.1%	1,614	40.7%
≥65 years	360	61.7%	360	41.4%	265	58.5%	265	37.7%
Index dose								
low	2,986	61.3%	2,986	43.1%	1,232	60.2%	No dose calculations - only 1 dose available	
high	866	53.9%	866	41.5%	647	54.3%		
Dosing pattern								
low dose only (DU 0.75 mg; SEMA 0.25/0.5 mg)	2,007	53.4%	2,297	37.3%	842	52.7%		
high dose only (DU 1.5 mg; SEMA 1.0 mg)	835	53.8%	778	40.8%	630	54.0%		
low dose to high dose	965	77.8%	675	62.5%	372	76.3%		
all others	45	60.0%	102	47.1%	35	68.6%		
BL use of insulin								
with insulin	1,227	57.1%	1,237	41.9%	561	55.6%	538	40.7%
without insulin	2,625	60.9%	2,615	43.1%	1,318	59.2%	1,341	40.1%

PDC ≥80% during 6 month follow-up was classified as “adherent“. Abbreviations: BL = baseline; DU = dulaglutide; EBCise = exenatide BCise; PDC = proportion of days covered; SEMA = semaglutide

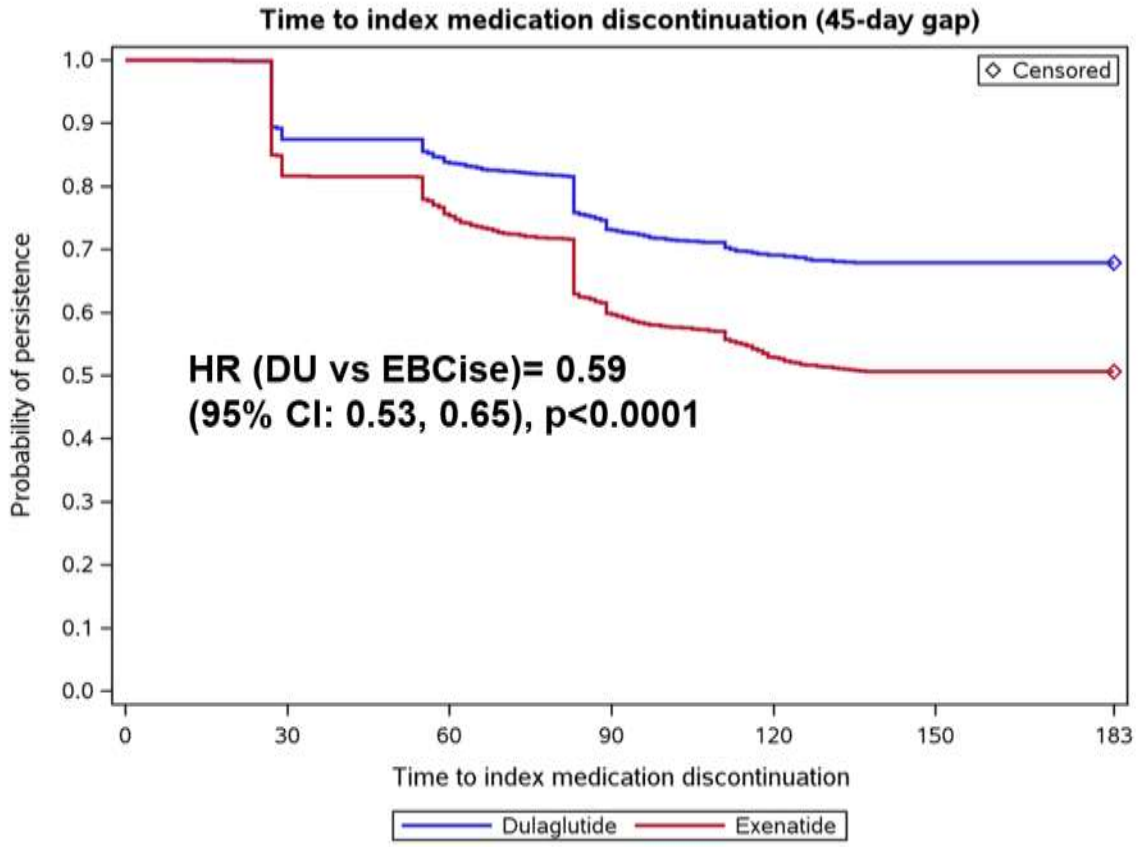
PERSISTENCE/DISCONTINUATION RESULTS – DU VS SEMA



Persistence	DU Initiators N = 3,852	SEMA Initiators N = 3,852
Patients who discontinued therapy (45-day gap), %	30.8%	40.8%*
Persistent Days (45-day gap)[a], mean (SD) days	143.6 (58.2)	129.9 (64.2)*
Patients who discontinued therapy (60-day gap), %	26.7%	34.0%*
Persistent Days (60-day gap)[a], mean (SD) days	147.2 (56.2)	137.1 (61.2)*

*p<0.001 vs dulaglutide. [a]Persistent days is the number of days from initiation to discontinuation of medication or end of follow-up period. Persistent patients were those with continuous therapy from the point of initiation until the end of the follow-up period, allowing for a maximum gap of 45 or 60 days from the time the previous fill run out to the next fill; patients with a gap between fills greater than 45 or 60 days were considered as "discontinued". Abbreviations: CI = confidence interval; DU = dulaglutide; HR = hazard ratio; SEMA = semaglutide

PERSISTENCE/DISCONTINUATION RESULTS – DU VS EQW



Persistence	DU Initiators N = 1,879	EBCise Initiators N = 1,879
Patients who discontinued therapy (45-day gap), %	32.1%	49.4%*
Persistent Days (45-day gap)[a], mean (SD) days	142.0 (58.4)	121.4 (62.3)*
Patients who discontinued therapy (60-day gap), %	27.7%	45.4%*
Persistent Days (60-day gap)[a], mean (SD) days	146.0 (56.5)	124.1 (62.0)*

*p<0.001 vs dulaglutide. [a]Persistent days is the number of days from initiation to discontinuation of medication or end of follow-up period. Persistent patients were those with continuous therapy from the point of initiation until the end of the follow-up period, allowing for a maximum gap of 45 or 60 days from the time the previous fill run out to the next fill; patients with a gap between fills greater than 45 or 60 days were considered as "discontinued". Abbreviations: CI = confidence interval; DU = dulaglutide; EBCise = exenatide BCise; HR = hazard ratio

LIMITATIONS

- Certain patient characteristics (such as socioeconomic status and education) that may be associated with outcomes of interest were not available for the study
- Limitations common to claims study exist (e.g. a claim for medication does not mean medication was taken as directed; claims for diagnosis code may be incorrectly coded; limited generalizability beyond those on commercial insurance)

CONCLUSION

At 6 months follow-up, a significantly higher proportion of propensity matched patients initiating dulaglutide were adherent and persistent to their treatment compared to patients initiating either semaglutide or exenatide BCise pen.

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POSTER LAYOUT

928-P

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STUDY DESIGN

Key Inclusion and Exclusion Criteria

- Included patients (age ≥18 years) with T2D initiating once weekly dulaglutide, semaglutide, or exenatide BCise from the HRD
- Excluded patients with any GLP-1 RA, or fixed combination of GLP-1 RA and insulin aspartate, diagnosis of secondary diabetes or T1D during the 6-month pre-index period

Outcome Measures

- Adherence measured by proportion of days covered (PDC), defined as the number of days with drug on hand divided by the number of days in the specified time interval (6-month follow-up period for this study); adherent patients were those with PDC ≥80%
- Persistence measured by length of continuous therapy; persistent patients were those with continuous therapy from the point of initiation until the end of the follow-up period, allowing for a maximum gap of 45 or 60 days from the date the previous fill's supply ran out to the next fill

Statistical Methods

- Propensity score, defined as probability of being initiated with index drug, was calculated using logistic regression with relevant demographics and baseline characteristics as factors. Propensity score 1-1 matching was used to adjust for treatment selection bias
- Kaplan-Meier survival analysis and Cox Proportional Hazard model were used to examine medication persistence

Abbreviations: GLP-1 RA = glucagon-like peptide-1 receptor agonist; HRD = HealthCore Integrated Research Database; T1D = type 1 diabetes; T2D = type 2 diabetes

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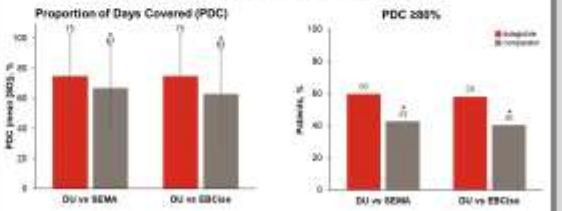

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CONCLUSIONS

At 6 months follow-up, a significantly higher proportion of propensity matched patients initiating dulaglutide were adherent and persistent to their treatment compared to patients initiating either semaglutide or exenatide BCise pen.

Baseline Characteristics Post-Matching

Characteristics	Matched DU (N = 3,492)	Matched SEMA (N = 3,492)	Std Diff	Matched DU (N = 1,679)	Matched EBCise (N = 1,679)	Std Diff
Sex, Female (%)*	51.6	50.9	0.01	48.4	48.4	0.00
Age, years, Mean (SD)*	53.5 (9.8)	53.6 (9.8)	0.01	54.8 (10.1)	54.8 (10.2)	0.00
aDCSI score, Mean (SD)*	0.9 (1.3)	0.8 (1.3)	0.05	0.8 (1.3)	0.8 (1.3)	0.05
Selected comorbidities (%)*						
Cardiovascular diseases	14.1	14.1	0.00	14.7	14.7	0.00
Dyslipidemia	71.8	73.5	0.04	73.7	73.6	0.00
Hypertension	73.1	73.9	0.02	74.0	73.6	0.02
Obesity	36.9	38.2	0.03	39.8	39.1	0.01
Antidiabetic medication use (%)*						
Insulin	31.9	32.1	0.00	29.9	29.6	0.03
SGLT2 inhibitors	27.1	29.2	0.05	24.2	25.3	0.05
DPP-4 inhibitors	36.8	35.4	0.03	35.6	35.8	0.00

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Adherence by Subgroups

Subgroups	DU initiators N	DU initiators Adherent	SEMA initiators N	SEMA initiators Adherent	DU initiators N	DU initiators Adherent	EBCise initiators N	EBCise initiators Adherent
Age								
<55 years	3,492	59.5%	3,492	42.8%	1,614	58.1%	1,614	40.7%
≥65 years	360	61.7%	360	41.4%	265	68.0%	265	37.7%
Index dose								
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high	866	53.6%	866	41.6%	647	54.3%		
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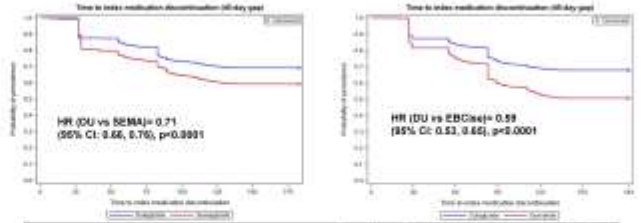
Persistence/Discontinuation



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Persistent Days (45-day gap)†, mean (SD) days	143.6 (58.2)	129.0 (64.2)*	142.0 (58.4)	121.6 (62.3)*
Patients who discontinued therapy (60-day gap), %	26.7%	34.8%*	27.7%	45.4%*
Persistent Days (60-day gap)†, mean (SD) days	147.2 (58.2)	137.1 (61.2)*	146.0 (58.5)	124.1 (62.0)*

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Acknowledgements: The authors would like to thank Diane Mercado, PhD for writing contributions.

Disclosures: RM, MY, and MK are employees and stockholders of Eli Lilly and Company. BN and MG are employees of HealthCore Inc., a wholly owned subsidiary of Anthem Inc. HealthCore, Inc. has under contract with Eli Lilly and Company for the conduct of the study.

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