Reducing Rates of DPP-4i and GLP-1RA Co-Prescribing Using an Educational Letter Program

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Background

- Clinical guidelines do not support the combined use of dipeptidyl-peptidase-4 inhibitors (DPP-4i) and glucagon-like peptide-1 receptor agonists (GLP-1RA) in patients with type 2 diabetes since both agents work through the incretin pathway.^{1,2}
- We implemented an educational letter program among 3 commercial health plan clients to notify patients and prescribers of unnecessary GLP-1RA and DPP-4i dual therapy and to encourage the discontinuation of one of these agents.

Objective

To assess the impact of an educational letter program on healthcare utilization as measured by:

 (a) the proportion of patients that discontinued concomitant GLP-1RA and DPP-4i therapy, and
 (b) the change in mean GLP-1RA and DPP-4i allowed amount per member

Methods

- Study design: Retrospective longitudinal cohort analysis of pharmacy claims
- o Study time frame: August 1, 2018 to February 22, 2020, with study group time periods as defined below:
- » Intervention group: August 1, 2019 to February 22, 2020
- » Historical control group: August 1, 2018 to February 22, 2019
- Inclusion criteria
- Member has at least 1 paid pharmacy claim for both a DPP-4i and a GLP-1RA with overlapping days of supply between August 1, 2019 and November 22, 2019 (intervention group) or August 1, 2018 and November 22, 2018 (historical control group)
- o Allowed amounts available for all pharmacy claims within the study time frame
- Members were excluded from participating if they were not continuously enrolled in the health plan during the study period
- Educational letters were faxed to providers and mailed to patients in the intervention group on November 22, 2019 (index date)³
- Follow-up periods
- o Intervention group: November 22, 2019 (index date program implemented) to February 22, 2020
- o Historical control group: November 22, 2018 (index date no intervention) to February 22, 2019
- Study outcomes
 - o Proportion of members that discontinued concomitant GLP-1RA and DPP-4i use
- o Change in mean GLP-1RA and DPP-4i allowed amount per member
- Statistical analysis: All statistical tests were performed using SAS® Version 9.4. Differences in intervention and control groups were compared using chi-square and Fisher's exact for categorical and t-tests for continuous variables.

Preliminary results suggest that lettering may affect the percentage of patients that switch from dual therapy to single therapy.

Table 1. Baseline Characteristics

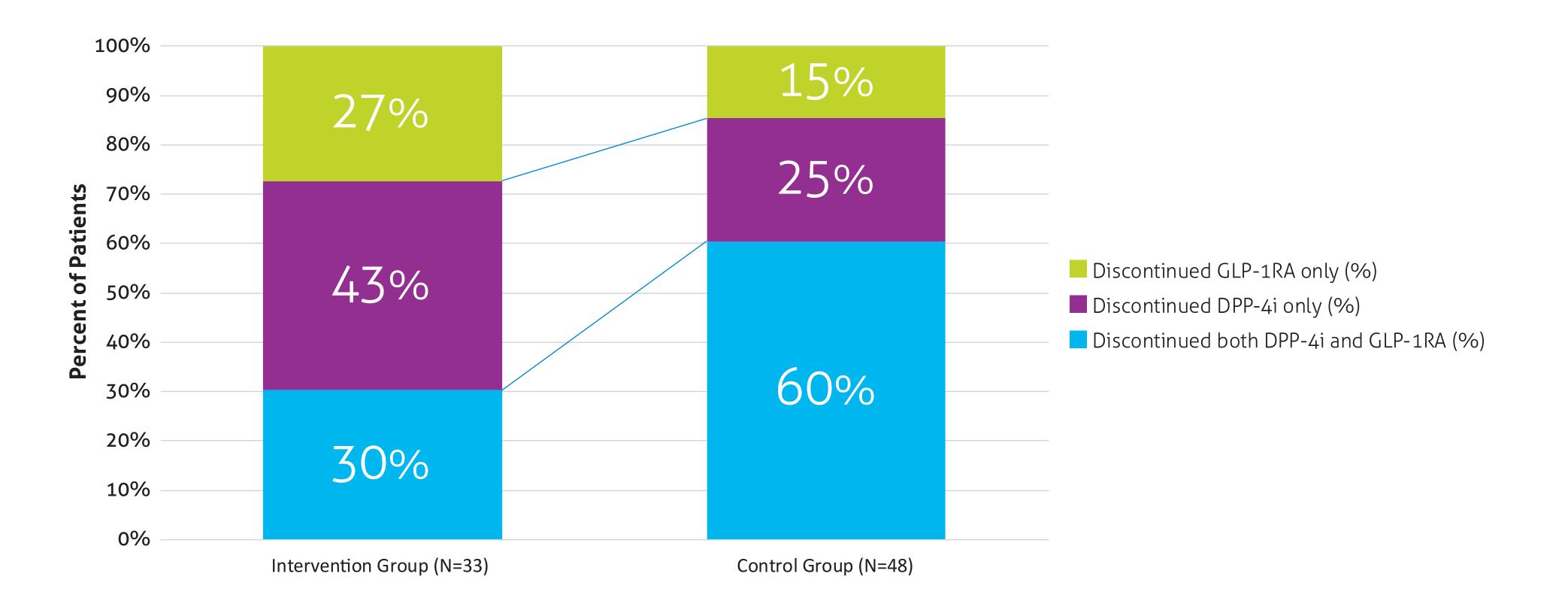
Mea	sure	Intervention Group (N=55)	Control Group (N=63)	P-value*
	18 – 39	4 (7)	5 (8)	
100 n (06)	40 – 64	47 (86)	49 (78)	0.53
Age, n (%)	≥ 65 4 (7) 9 (14)			
	Mean (SD)	54.72 (9.25)	56.47 (9.17)	0.31
Gender, n (%)	F	28 (51)	39 (62)	0.23
	М	27 (49)	24 (38)	
Number of	1	50 (91)	47 (75)	
Prescribers, n	2	3 (5)	15 (24)	0.01
(%)	3	2 (4)	1 (1)	
Statistically significant at n	0.05			

Measure	Intervention Group (N=55)	Control Group (N=63)	P-value*
Proportion of patients that discontinued concomitant GLP-1RA and DPP-4i use, n (%)	33 (60)	48 (76)	0.06
Change in mean GLP-1RA and DPP-4i allowed amount per member, \$	-\$1,626	-\$1,740	0.66

*Statistically significant at p <0.05

Figure 1: Patients Who Discontinued Concomitant Therapy During Follow-up

Table 2. Results



Results

- Age and gender distribution at baseline were not statistically different between the intervention and control groups; the control group had significantly more patients with 2 prescribers (Table 1)
- There was no statistical difference in the proportion of patients that discontinued concomitant therapy in the intervention group (60%) versus control group (76%) during the follow-up period (p=0.06) (Table 2)
- During follow-up, the change in mean GLP-1RA and DPP-4i allowed amount per member was not statistically different between groups, with a mean decrease of \$1,626 in the intervention versus \$1,740 in the control (p=0.66) (Table 2)
- Of the patients that discontinued concomitant therapy during follow-up, 70% switched from dual therapy to single therapy in the intervention group versus 40% in the control group (Figure 1)

Limitations

- Analysis is based on prescription claims data, which may not reflect actual medication use.
- We did not require a set period of time for overlapping therapy, which could overreport therapy switches in the discontinuation group, impact cost differences between groups, and cause a number of other biases.
- A follow-up period of 3 months may not be adequate time to assess therapy changes due to infrequent
 patient-physician interactions in diabetes management.
- We did not control for baseline characteristics, which could affect the interpretation of our results.
- Outcomes were only assessed for GLP-1RA and DPP-4i therapies; changes in utilization and cost of other diabetes medications were not evaluated.
- The narrow focus of study outcomes limited the interpretation of unexpected findings.

Conclusion

- The educational letter program's impact on concomitant therapy discontinuation and associated costs was not statistically significant compared to a historical control group.
- A higher percentage of members switched from dual therapy to single therapy in the intervention group compared to the control group. This finding requires further analysis to determine whether our program had an impact on other aspects of care.
- A longer evaluation period is needed to more accurately measure therapy changes associated with the letter intervention.
- Future studies should evaluate the entirety of diabetic therapy versus selected agents.
- The significant difference in number of prescribers between study groups should be further evaluated to determine whether it had an impact on therapy changes.
- In order to address DPP-4i/GLP-1RA co-prescribing, it may be valuable to compare lettering to telephonic outreach or formulary strategies.

References

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Disclosures

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