Medication use among T2DM patients initiating treatment with once weekly semaglutide for diabetes (OW sema T2D)

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https://sciencehub.novonordisk.com/ispor-us2023/Buysman1.html?cid=qr-9491490097

Aim

- To characterize medication use patterns among patients with T2DM initiating once weekly semaglutide for diabetes (OW sema T2D)

Introduction

- When choosing pharmacologic treatment for T2DM, the American Diabetes Association recommends a patient centric approach that includes the consideration of factors such as comorbidities, hypoglycemia risk, effect on body weight, side effects, cost and patient preferences[1]
- Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) are a class of antidiabetic medication used in the medical management of patients with T2DM[2]
- Injectable once-weekly semaglutide for diabetes (OW sema T2D) is a GLP-1 RA that was first approved by the Food and Drug Administration in 2017
- There is a gap in understanding the real-world use patterns of this medication

Methods

Retrospective observational analysis using medical and pharmacy claims data from the Optum Research Database between 01/01/2017-12/31/2020

- Study patients were required to have:
  - ≥1 claim for OW sema T2D (first claim=index date) between 01/01/2018-12/31/2019
  - ≥1 T2DM diagnosis during the study period
  - Continuously enrolled with Commercial or Medicare Advantage with Part D (MAPD) insurance coverage for 12 months prior to (baseline) and 12 months following (follow-up) the index date
  - Exclusions:
    - Under 18 years old
    - Incomplete demographic data
    - Pregnancy
- Variables:
  - **Line of therapy (LOT):** determined at the medication class level; start of first LOT was the date of the first OW sema T2D claim; end of LOT was discontinuation (gap in medication class of ≥ 60 days), change in medication class, or the end of the study; the first 3 LOTs are presented in this analysis
  - **Length of LOT**: number of days from the start to the end of a LOT
  - **Persistence**: time from index to the runout of days supply prior to ≥ 60-day gap in OW sema T2D treatment

Results

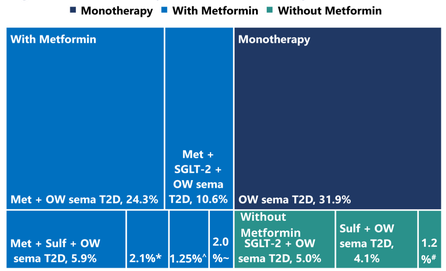
- Patients (n = 15,588) had a mean age of 59 years, 60.8% had commercial coverage and 47.8% were male (Table 1)
- Most patients had evidence of lipid metabolism disorder, hypertension, T2DM with complications, and other nutritional, endocrine, or metabolic disorders (Table 1)

Table 1: Patient demographic and clinical characteristics

	Total (n = 15,588)
Age, mean (SD)	58.9 (11.4)
Male gender, n (%)	7,452 (47.8)
Insurance type, n (%)	
Commercial	9,474 (60.8)
Medicare Advantage	6,114 (39.2)
Quan-Charlson comorbidity index, mean (SD)	1.5 (1.7)
Comorbid conditions, n (%)	
Lipid metabolism disorder	13,363 (85.7)
Hypertension	13,123 (84.2)
Diabetes mellitus with complications	12,367 (79.3)
Other nutritional, endocrine, or metabolic disorders	11,134 (71.4)
Chronic kidney disease	3,826 (24.5)

- All patients had ≥ 1 LOT, 9,071 (58.2%) had ≥ 2 LOTs, and 3,866 (24.8%) had 3 LOTs during the follow-up period (Table 2)
- 8,564 (54.9%) of patients were persistent with OW sema T2D through the end of follow-up (data not shown)

Figure 1A: LOT 1 top 10 medication regimens



*Met + SGLT-2 + Sulf + OW sema T2D, ^Met+TZD+ OW sema T2D, ~Met+DPP-4+OW sema T2D, #DPP-4 +OW sema T2D

Table 2: Length of LOT, mean (SD) days

	LOT 1 (n = 15,588)	LOT 2 (n = 9,071)	LOT 3 (n = 3,866)
OW sema T2D monotherapy	179.6 (138.3)	136.2 (79.9)	88.4 (57.8)
Metformin+OW sema T2D	237.4 (131.5)	158.8 (86.0)	107.5 (60.4)
Metformin+SGLT-2+OW sema T2D	258.4 (127.8)	173.8 (84.9)	115.2 (59.6)
Metformin+sulfonylurea+OW sema T2D	228.0 (127.2)	175.8 (87.5)	110.4 (60.9)
SGLT-2+OW sema T2D	207.3 (133.3)	153.9 (80.7)	115.7 (61.0)
Sulfonylurea+OW sema T2D	179.0 (126.3)	-	102.4 (52.2)
Metformin+SGLT-2+sulfonylurea+OW sema T2D	253.5 (128.5)	-	-
Metformin+DPP-4+OW sema T2D	187.0 (126.2)	-	-
Metformin+TZD+OW sema T2D	212.3 (137.9)	-	-
DPP-4+OW sema T2D	183.2 (131.0)	-	-
Metformin monotherapy	-	163.4 (91.4)	102.0 (67.2)
Metformin+SGLT-2	-	161.9 (88.5)	99.8 (63.6)
Metformin+sulfonyluea	-	181.5 (88.6)	124.2 (60.6)
GLP-1monotherapy, excluding semaglutide	-	154.1 (99.9)	-
Sulfonylurea monotherapy	-	147.7 (86.9)	96.6 (63.2)

LOT, line of therapy; OW sema T2D, once weekly injectable semaglutide for diabetes; SGLT-2, sodium glucose cotransporter-2 inhibitor; DPP-4, dipeptidyl peptidase 4; inhibitor; TZD, thiazolidinedione; GLP-1, glucagon-like peptide-1 receptor agonists

- LOT 1 – most common = OW sema T2D monotherapy (31.9%, Fig 1A); longest = metformin+SGLT-2+OW sema T2D (258.4 days, Table 2)
- LOT 2 – most common = OW sema T2D monotherapy (18.5%, Fig 1B); longest = metformin+sulfonylurea (181.5 days, Table 2)
- LOT 3 – most common = OW sema T2D+metformin (14.4%, Fig 1C); longest = metformin+sulfonylurea (124.2 days, Table 2)

Figure 1B: LOT 2 top 10 medication regimens

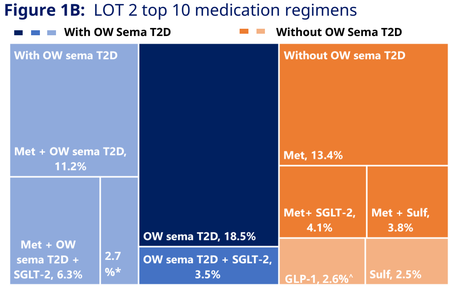
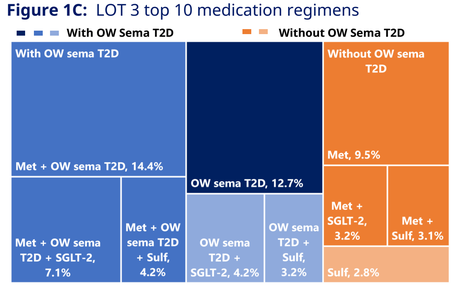


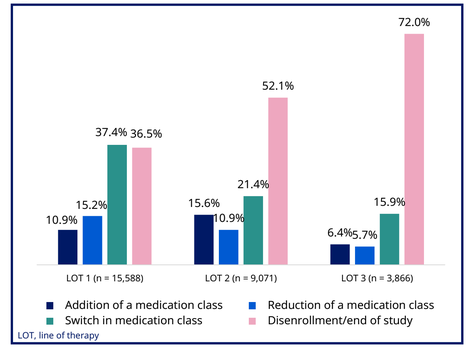
Figure 1C: LOT 3 top 10 medication regimens



*Met + OW sema T2D + Sulf, ^excludes semaglutide

LOT, line of therapy; OW sema T2D, once weekly injectable semaglutide for diabetes; MET, metformin, sulf, sulfonylurea, SGLT-2, sodium glucose cotransporter-2 inhibitor; DPP-4, dipeptidyl peptidase 4; inhibitor; TZD, thiazolidinedione; GLP-1, glucagon-like peptide-1 receptor agonists

Figure 2: Reason for LOT end



- More than one-third (36.5%) had 1 LOT until the end of follow-up
- Switching a medication class was the most common reason for LOTs ending prior to the end of study (37.4% for LOT 1, 21.4% for LOT 2, 15.9% for LOT 3
- Most patients who began a 2nd LOT or 3rd LOT continued it until the end of follow up (Fig 2)

Limitations

- Medical claims data were collected for service payment and not for research
- Medication use was measured from pharmacy claims; patients may not have utilized medications as prescribed
- Medication samples provided to the patient were not included in this study
- Claims data do not include other clinical data such as body mass index, weight, or social determinants.
- Results may not be generalizable to patients with Medicaid coverage or those who are uninsured

Conclusion

- OW sema T2D monotherapy was the most commonly filled regimen among patients initiating OW sema T2D, followed by OW sema T2D+MET
- Most patients had 1 or 2 regimens during the 12-month follow-up period
- 42.2% of patients with a second LOT and 45.8% of patients with a third LOT had a LOT that included OW sema T2D
- Results elucidate prescribing behavior within the first year of OW sema T2D use

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