Medication utilization patterns among T2DM patients initiating treatment with oral semaglutide

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https://sciencehub.novonordisk.com/ispor-us2023/Buysman.html?cid=qr-5560052357

Aim

- To characterize medication use patterns among patients with type 2 diabetes mellitus (T2DM) who initiated treatment with oral semaglutide (OS)

Introduction

- Patients with T2DM require individualized treatment plans to balance benefits and risks over the course of disease.
- The selection of pharmacotherapy to manage T2DM can be challenging when polypharmacy and other comorbidities, including obesity, renal impairment, and heart disease are present.[1,2]
- OS was approved by the FDA in 2019 as the first oral glucagon-like peptide-1 receptor agonist for T2DM, providing a new treatment option to patients with comorbid cardiovascular or kidney disease who are unable or unwilling to self-administrator an injectable agent.
- There is a lack of real-world information on treatment patterns among patients initiating OS.

Methods

- Retrospective observational analysis using medical and pharmacy claims data from the Optum Research Database between 11/01/2018–12/31/2020.
- Study patients were required to have:
  - ≥ 1 claim for OS from 11/01/2019–6/30/2020; date of the first OS claim was the index date
  - Continuous health plan enrollment 12 months prior to (baseline period) and 6 months following (follow-up period) the index date
  - ≥ 1 claim for T2DM during baseline or follow-up periods
- Patients were excluded if they were under 18 years of age, pregnant, or had incomplete demographic data
- Variables:
  - **Line of therapy (LOT)**: determined based on an algorithm at the medication class level; start of LOT = date of the first T2DM medication claim (first OS claim for LOT 1); end of LOT = discontinuation (gap in medication class of ≥ 60 days), change in treatment (adding, stopping, or switching a medication class), or the study end
  - **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 OS treatment

Results

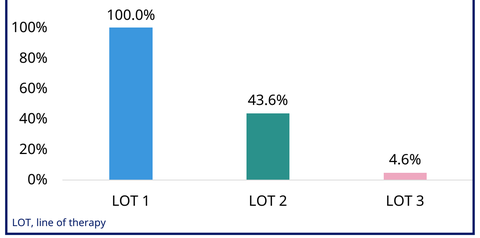
- Patients initiating OS (n = 1,937) had a mean age of 58.7 years, 66.5% had commercial insurance, and 51.8% were male (Table 1).
- A majority of patients had evidence of a lipid metabolism disorder, hypertension, T2DM with complications, and other nutritional, endocrine, or metabolic disorders (Table 1).

Table 1: Patient demographic and clinical characteristics

	Total (n = 1,937)
Age, mean (SD)	58.7 (11.7)
Male gender, n (%)	1,004 (51.8)
Insurance type, n (%)	
Commercial	1,288 (66.5)
Medicare Advantage	649 (33.5)
Quan-Charlson comorbidity index, mean (SD)	1.2 (1.5)
Top comorbid conditions, n (%)	
Lipid metabolism disorder	1,601 (82.7)
Hypertension	1,569 (81.0)
Diabetes mellitus with complications	1,453 (75.0)
Other nutritional, endocrine, or metabolic disorders	1,299 (67.1)
Chronic kidney disease	416 (21.5)

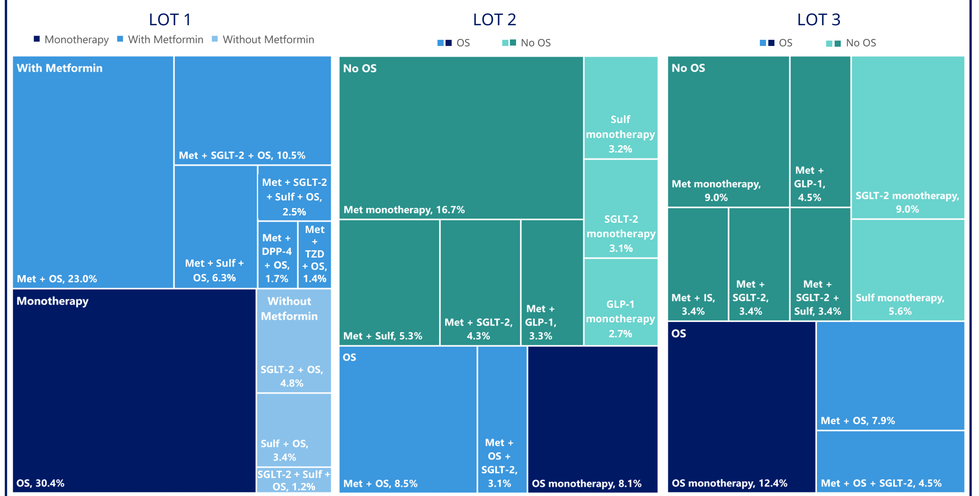
- All patients had ≥ 1 LOT, 844 (43.6%) had ≥ 2 LOTs, and 89 (4.6%) had 3 LOTs during the follow-up period (Figure 1).

Figure 1: Proportion of patients by LOT



- 1,207 (62.3%) of patients were persistent with OS through the end of follow-up (data not shown).

Figure 2: Top 10 regimens by LOT



DPP-4, dipeptidyl peptidase 4 inhibitor; GLP-1, glucagon-like peptide-1; IS, injectable semaglutide; Met, metformin; OS, oral semaglutide; SGLT-2, sodium glucose cotransporter-2 inhibitor; Sulf, sulfonylurea, TZD, thiazolidinedione

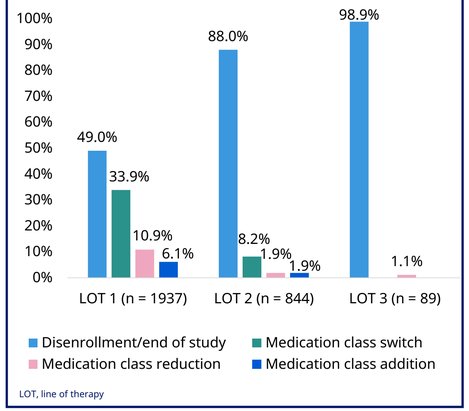
Table 2: Length of LOT, mean (SD) days

	LOT 1 (n=1,937)	LOT 2 (n=844)	LOT 3 (n=89)
OS monotherapy	106.3 (65.0)	86.2 (37.2)	38.1 (24.2)
Met + OS	141.5 (55.2)	68.9 (29.5)	23.4 (24.0)
Met + SGLT-2 + OS	153.8 (51.5)	91.9 (34.9)	33.8 (8.9)
Met + sulfonylurea + OS	140.1 (54.0)	-	-
SGLT-2 + OS	111.7 (63.3)	-	-
Sulfonylurea + OS	119.6 (62.7)	-	-
Met + SGLT-2 + sulfonylurea + OS	145.8 (58.2)	-	-
Metformin + DPP-4 + OS	124.8 (67.3)	-	-
Met monotherapy	-	92.3 (39.4)	35.1 (35.9)
Met + sulfonylurea	-	110.5 (38.2)	-
Met + SGLT-2	-	104.6 (38.7)	64.3 (18.9)
Met + GLP-1	-	101.5 (41.0)	66.5 (42.7)
Sulfonylurea monotherapy	-	88.0 (44.7)	61.8 (41.1)
SGLT-2 monotherapy	-	104.7 (36.3)	52.8 (44.3)

DPP-4, dipeptidyl peptidase 4 inhibitor; GLP-1, glucagon-like peptide 1; LOT, line of therapy; Met, metformin; OS, oral semaglutide; SGLT-2, sodium glucose cotransporter-2 inhibitor

- The top first-line medication regimens were OS monotherapy (30.4%) and OS in combination with metformin (23.0%) (Figure 2).
- In LOT 2, among the top 10 regimens, 24.5% of patients were prescribed combination therapy and 19.7% of regimens included OS (Figure 2).
- In LOT 3, among the top 10 regimens, 27.0% of patients were prescribed combination therapy and 24.7% of regimens included OS (Figure 2).
- Patients remained on their initial prescription of OS monotherapy for a mean of 106.3 days (Table 2).
- Almost half of patients (49.0%) continued their first LOT until the end of the 6-month follow-up period (Figure 3).
- Among patients with a second LOT, 88.0% continued it until the end of the follow-up period (Figure 3).

Figure 3: Reason for LOT end



Limitations

- Medical claims data were collected for service payment and not for research.
- Medication use was measured from pharmacy claims; patients may not have consumed medications as prescribed.
- Medication samples provided to the patient were not included in this study.
- Claims data does 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.

Conclusions

- Nearly half of all patients used only one medication regimen during the 6-month follow-up period.
- Metformin was a common concomitant T2DM prescription among patients who initiated OS.
- Approximately one-quarter of patients continued OS as monotherapy or combination therapy through the second and third lines of treatment.
- This real-world exploratory study may help physicians and payers understand prescribing practices within the first six months of OS use.

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References:
(**1**) Indu R, et al. Perspect Clin Res 2018: 9; 139-144. (**2**) Nowakowska M, et al. BMC Medicine 2019: 17; 145–155.;