Weight of the Matter: Evaluation of Prescribing Patterns of Semaglutide in Patients who are Overweight or Obese

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BACKGROUND

- Semaglutide is a glucagon-like peptide 1 receptor agonist (GLP-1 RA)[1]
- The Food and Drug Administration (FDA) approved semaglutide for chronic weight management in 2021 in:
  - Adults with overweight in the presence of at least one weight-related comorbidity
  - Adults or children ≥ 12 years old with obesity[1]
- FDA indications for Atherosclerotic Cardiovascular Disease (ASCVD) and Metabolic Dysfunction Associated Steatohepatitis (MASH) followed thereafter [2,3]
- Semaglutide showed up to a 14.9% mean weight loss at maximum tolerated weekly dose of 2.4 mg[1]

OBJECTIVE

- Assess changes in clinical outcomes after initiation of subcutaneous (SC) semaglutide and ensure appropriate semaglutide prescribing for chronic weight management

METHODS

- **Design:** Single center, multi-site, randomized retrospective review
- **Time Frame:** January 1st – June 30th, 2025
- **Key Inclusion Criteria**:
  - Age ≥ 18 years old
  - Newly prescribed SC semaglutide for chronic weight management by primary care, endocrinology or cardiology providers with a
  - Baseline Body Mass Index (BMI):
    - 25.0 – 29.9 kg/m^2 without comorbidities
    - 25.0 – 29.9 kg/m^2 with at least one weight-related comorbidity
    - ≥ 30 kg/m^2
- **Key Exclusion Criteria:**
  - Contraindication or hypersensitivity to semaglutide
  - Prior use of GLP-1 RA, GLP-1/GIP agonist or any other weight loss medications
  - History of bariatric surgery
  - No data points 6 months post semaglutide initiation
- **Outcomes:**
  - Primary: to assess the differences in the following clinical outcomes 6 months post initiation of semaglutide: systolic blood pressure (SBP), diastolic blood pressure (DBP), heart rate (HR), LDL (low-density lipoprotein), weight, BMI , hemoglobin A1c (HbA1c)
  - Secondary: appropriateness of SC semaglutide prescribing based on FDA approved indication and to compare differences in clinical outcomes 6 months after semaglutide initiation versus those unable to initiate therapy

RESULTS

BASELINE CHARACTERISTICS (n=144)

Age, (yr)	
Median Age	53
Sex, n (%)	
Male	90 (62.5)
Female	54 (37.5)
Race, n (%)	
White	117 (81.2)
Black	14 (9.7)
Other	13 (9.1)
Ethnicity, n (%)	
Hispanic	82 (56.9)
Non-Hispanic	61 (42.4)
Unknown	1 (0.7)
Groups (BMI), n (%)	
Obesity (≥ 30 kg/m^2)	110 (76.4)
Overweight with ≥ 1 Comorbidity (25 – 29.9 kg/m^2)	32 (22.2)
Overweight without Comorbidities (25 – 29.9 kg/m^2)	2 (1.4)
Weight-Related Comorbidities, n (%)	
Hyperlipidemia	98 (68.1)
Hypertension	82 (56.9)
Prediabetes	70 (48.6)
Obstructive Sleep Apnea	33 (22.9)
ASCVD	32 (22.2)
MASH	16 (11.1)
Polyendocrine Metabolic Ovarian Syndrome	9 (6.2)
Type 2 Diabetes	4 (2.8)
Prescriber Setting, n (%)	
Primary Care	98 (68.1)
Cardiology	43 (29.9)
Endocrinology	3 (2)
Pharmacist Referral, n (%)	
Pharmacist Referral	61 (42.4)
Dose Titration, n (%)	
Provider	62 (43.1)
Pharmacist	53 (36.8)
Not titrated or not initiated	29 (20.1)

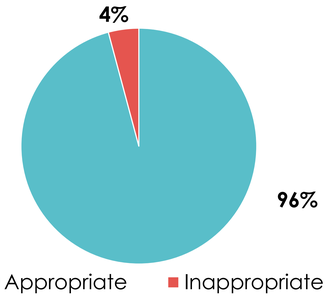
PRIMARY OUTCOME

Table 1: Clinical Outcomes in Patients 6 Months Post-Initiation of SC Semaglutide for Chronic Weight Management, (n=122)

Outcome	Baseline	Post-Initiation	Difference	P-Value
SBP (mmHg)	129.1 ± 15.7	122.0 ± 13.8	-7.0 ± 15.0	**<0.001**
DBP (mmHg)	79.6 ± 10.8	77.2 ± 8.6	-2.7 ± 10.8	**0.013**
HR (BPM)	75.1 ± 12.2	76.2 ± 11.7	0.6 ± 11.6	0.622
LDL (mg/dL)	104.4 ± 37.0	79.0 ± 34.3	-28.8 ± 42.4	**<0.001**
Weight (kg)	100.3 ± 20.0	92.0 ± 18.1	-8.0 ± 7.1	**<0.001**
BMI (kg/m^2)	35.34 ± 6.28	32.28 ± 5.57	-3.06 ± 2.49	**<0.001**
HbA1c (%)	5.66 ± 0.71	5.45 ± 0.33	-0.32 ± 0.28	**<0.001**

SECONDARY OUTCOMES

Figure 1: Appropriateness of Initial Prescription, (n=144)



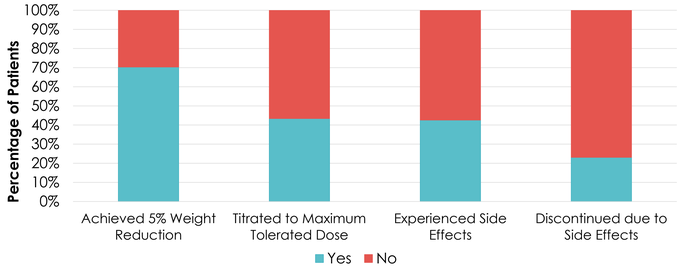
Based on FDA Indications During Evaluation Time Frame

Table 2: Change in Clinical Outcomes at 6 Months Between Patients Initiated vs. Not Initiated on SC Semaglutide, (n=144)

Outcomes	Initiated (n=122)	Not Initiated (n=22)	P-Value
SBP(mmHg)	-7.0 ± 15.0	2.3 ± 20.1	0.106
DBP (mmHg)	-2.7 ± 10.8	-0.9 ± 12.2	0.585
HR (BPM)	0.6 ± 11.6	-2.1 ± 20.1	0.616
LDL (mg/dL)	-28.8 ± 42.4	-12.2 ± 13.3	0.083
Weight (kg)	-8.0 ± 7.1	-0.1 ± 7.8	**<0.001**
BMI (kg/m^2)	-3.06 ± 2.49	-0.65 ± 2.78	**0.003**
HbA1c (%)	-0.32 ± 0.28	-0.03 ± 0.15	**0.003**

EXPLORATORY OUTCOMES

Figure 2: Exploratory Outcomes in Patients Initiated on SC Semaglutide for Chronic Weight Management, (n=122)



DISCUSSION

- Semaglutide was prescribed most in patients with a BMI ≥ 30 kg/m^2 (76.4%)
- Hyperlipidemia (68.1%), hypertension (56.9%) and prediabetes (48.6%) were the most common comorbidities
- In patients who initiated therapy, a statistically significant difference in clinical outcomes (SBP, DBP, LDL, weight, BMI and HbA1c) was observed 6 months post-initiation
- The majority of prescriptions were appropriately prescribed based on FDA indications
- A statistically significant difference was seen in patients who initiated therapy for weight, BMI and HbA1c versus those who were unable to initiate therapy at 6 months
- A weight reduction of at least 5% from baseline was observed in 70% of patients initiated on semaglutide
- Side effects occurred in 40% of patients with approximately half of these patients leading to treatment discontinuation

LIMITATIONS

- Retrospective chart review based on electronic health record documentation
- Appropriateness of prescribing was generalizable to FDA approved indications and available formulations as of January 1, 2025
- Unable to determine if lipid panels were obtained fasting
- Additional therapies for weight-related comorbidities and/or chronic disease states were not evaluated
- Adherence to therapy was not evaluated during treatment period

CONCLUSION

- This evaluation provided insight into real-world prescribing patterns of SC semaglutide and its impact on key clinical outcomes among patients with overweight or obesity

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DISCLOSURES

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