

Head-to-Head Comparison of Healthcare Costs and Utilization Among Patients with Semaglutide vs Tirzepatide Use

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BACKGROUND

Obesity, affecting over 40% of US adults, contributes to increased healthcare resource utilization (HCRU) and costs.¹ Direct medical costs associated with obesity are estimated at \$147 billion annually.² New anti-obesity medications (AOMs), such as semaglutide (Wegovy) and tirzepatide (Zepbound), offer the potential to reduce obesity prevalence and lower HCRU and costs.³

OBJECTIVES

To assess HCRU and costs among US patients with obesity using the AOMs semaglutide and tirzepatide.

METHODS

Setting

A retrospective cohort study assessing the Kythera data population (2022-2024) with an identification period from November 1, 2023, to December 31, 2023 (Figure 1).

Sample

Patients with obesity were classified into 2 cohorts:

- AOM cohort: Received tirzepatide (Zepbound) or semaglutide (Wegovy) during the identification period (index date = first AOM claim).
- Non-AOM cohort: No evidence of AOM use during the study period; random index dates were selected within the AOM cohort's range; a 1% random sample of eligible patients was included.

Baseline		Identifi		Follow up	up
11/01/2022		11/01/2023	12	/31/2023	05/31/
 Inclusion ≥1 claim with a diagr ≥1 pharmacy claim for Exclusion ≥1 claim for any AON >1 claim for obesity r 	nosis of obesity during baseline period or AOM (Wegovy or Zepbound) during identification I during baseline period nedication on the same index date	n period			
	12 months baseline			6 months follow-up	
		•	🔶 Index dat	e: First claim date for Wegovy or Zep	pbound

Figure 1. Study design

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METHODS (cont'd)

Outcomes

Outcomes included healthcare utilization measures such as hospital admissions, length of stay, emergency visits, and outpatient visits. Health expenditures were also evaluated, including total costs, as well as specific costs related to inpatient, outpatient, emergency, and pharmacy services.

Analysis

- Descriptive statistics (means and percentages) were used to describe the characteristics and outcomes of both cohorts. Chi-square tests were performed for categorical variables (e.g., hospital admissions, emergency visits), and two-sample t-tests were conducted for continuous variables (e.g., length of stay, healthcare expenditures).
- Standardized differences were calculated to assess balance between the cohorts, with values <0.1 considered negligible. P-values were reported for each outcome.
- Subgroup analysis comparing outcomes between semaglutide and tirzepatide users was also included.

RESULTS

We identified 22,620 patients in the AOM cohort (19,801 semaglutide and 2,819 tirzepatide users) and 84,427 in the non-AOM cohort. Patients in the AOM cohort were younger (mean age 45.50 vs 50.67 years, p<0.0001), more likely to be female (79.35% vs 58.56%, p<0.0001), and had higher comorbidity scores, with 61.97% having an Elixhauser score ≥2 compared to 13.50% in the non-AOM group (p<0.0001).

In terms of socioeconomic status, fewer AOM patients lived in low-SES areas (27.77% vs 33.53%, p<0.0001), while a higher proportion lived in medium or high-SES areas compared to the non-AOM group (Table 1). Among AOM users, semaglutide patients were younger (45.39 vs 46.23 years, p=0.0004) and more likely to live in low-SES areas (28.21% vs 24.69%, p=0.0001) than tirzepatide users.

	With AOM (Wegovy or Zepbound) (N = 22,620)		Without AOM (N = 84,427)		P-value	SMD
Characteristics	N/Mean	%/SD	N/Mean	%/SD		
Age	45.5	12.15	50.67	18.15	<.0001	0.3035
Age Group: 18-40	7,615	33.66%	19,346	22.91%	<.0001	0.2489
Age Group: 41-60	12,338	54.54%	32,580	38.59%	<.0001	0.3262
Age Group: 61-80	2,461	10.88%	25,355	30.03%	<.0001	0.4438
Age Group: 80+	20	0.09%	3,101	3.67%	<.0001	0.2139
Gender						
Male (%)	4,671	20.65%	34,988	41.44%	<.0001	0.4373
Female (%)	17,949	79.35%	49,439	58.56%	<.0001	0.4373
Comorbidity Scores						
Charlson Comorbidity Score (≥ 2)	1,151	5.09%	2,519	2.98%	<.0001	0.1158
Chronic Disease Score (≥ 2)	11,898	52.60%	6,525	7.73%	<.0001	1.3595
Elixhauser Score (≥ 2)	14,017	61.97%	11,395	13.50%	<.0001	1.2868
SES						
Low	6,282	27.77%	28,311	33.53%	<.0001	0.1233
Medium	7,389	32.67%	27,160	32.17%	0.1565	0.0106
High	8,523	37.68%	27,080	32.08%	<.0001	0.1191

Table 1. Baseline Characteristics of the Study and Comparison Cohorts

AOM: anti-obesity medication; SD: standard deviation; SES: socioeconomic status; SMD: standardized mean difference

RESULTS (cont'd)

The AOM cohort had lower hospital admission rates (1.63% vs 6.62%, p<0.0001), shorter length of stay (0.12 vs 1.27 days, p<0.0001), and lower rates of emergency department (ED) (6.23% vs 13.06%, p<0.0001) and outpatient visits (80% vs 82%, p<0.0001) than the non-AOM cohort (**Table 2**).

 Table 2. Healthcare Utilization of the Study and Comparison Cohorts

	With M (Wegovy o (N = 2	edication r Zepbound) 22,620)	Without Medication (N = 84,427)		P-Value	SMD
Outcome	N/Mean	%/SD	N/Mean	%/SD		
Healthcare utilization						
Hospital admissions	368	1.63%	5,588	6.62%	<.0001	0.2186
Length of stay (days)	0.12	1.83	1.27	10.29	<.0001	0.1253
Emergency visits	1,410	6.23%	11,026	13.06%	<.0001	0.2138
Outpatient visits	18,095	80.00%	69,009	81.74%	<.0001	0.0448

SD: standard deviation: SMD: standardized mean difference

Total health expenditures were \$8,055.65 for AOM users compared with \$9,722.92 for non-users (p < 0.0001). Significant reductions were also observed in inpatient, outpatient, emergency, and pharmacy costs, with the most notable difference seen in inpatient costs (\$87.37 for AOM users vs \$953.17 for non-users, p < 0.0001) (**Figure 2**).





AOM: anti-obesity medication

Among AOM users, tirzepatide use was associated with shorter length of stay (0.07 vs 0.12 days, p=0.0225) and lower rates of ED (3.33% vs 6.65%, p<0.0001) and outpatient visits (77.19% vs 80.39%, p<0.0001) (**Table 3**).

In the comparison between Wegovy and Zepbound users, total healthcare expenditures were higher for Wegovy users (\$8,179.71 vs \$7,184.25, p<0.0001). Wegovy users also had higher emergency (\$196.73 vs \$89.87, p < 0.0001) and outpatient costs (\$3,261.62 vs \$2,520.94, p<0.0001) (**Figure 3**).



RESULTS (cont'd)

 Table 3. HCRU Among Obesity Patients Using Semaglutide (Wegovy)
 vs Tirzepatide (Zepbound)

	We (N = 1	govy 9,801)	Zepbou 01) (N = 2,8		P-Value	SMD
Outcome	N/Mean	%/SD	N/Mean	%/SD		
Healthcare utilization						
Hospital admissions (%)	330	1.67%	38	1.35%	0.2109	0.0252
Length of stay (days)	0.12	1.93	0.07	0.93	0.0225	0.0276
Emergency visits (%)	1,316	6.65%	94	3.33%	<.0001	0.1371
Outpatient visits (%)	15,919	80.39%	2,176	77.19%	<.0001	0.0801

HCRU: healthcare resource utilization: SD: standard deviation: SMD: standardized mean difference

Figure 3. Health Expenditures in Obesity Patients: Wegovy Users vs Zepbound Users



CONCLUSION

AOM users showed significantly lower HCRU and costs than non-AOM users, particularly in inpatient and emergency services. When comparing AOMs, Wegovy users had higher overall healthcare costs than Zepbound users, driven by increased outpatient and emergency visit expenditures. Overall, AOM use was associated with reduced HCRU and health expenditures, highlighting their potential as effective interventions for managing obesity and alleviating the healthcare burden.

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