

# Impact of Ozempic vs Wegovy on Osteoarthritis Risk in Patients with Obesity: A Retrospective Cohort Study

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### BACKGROUND

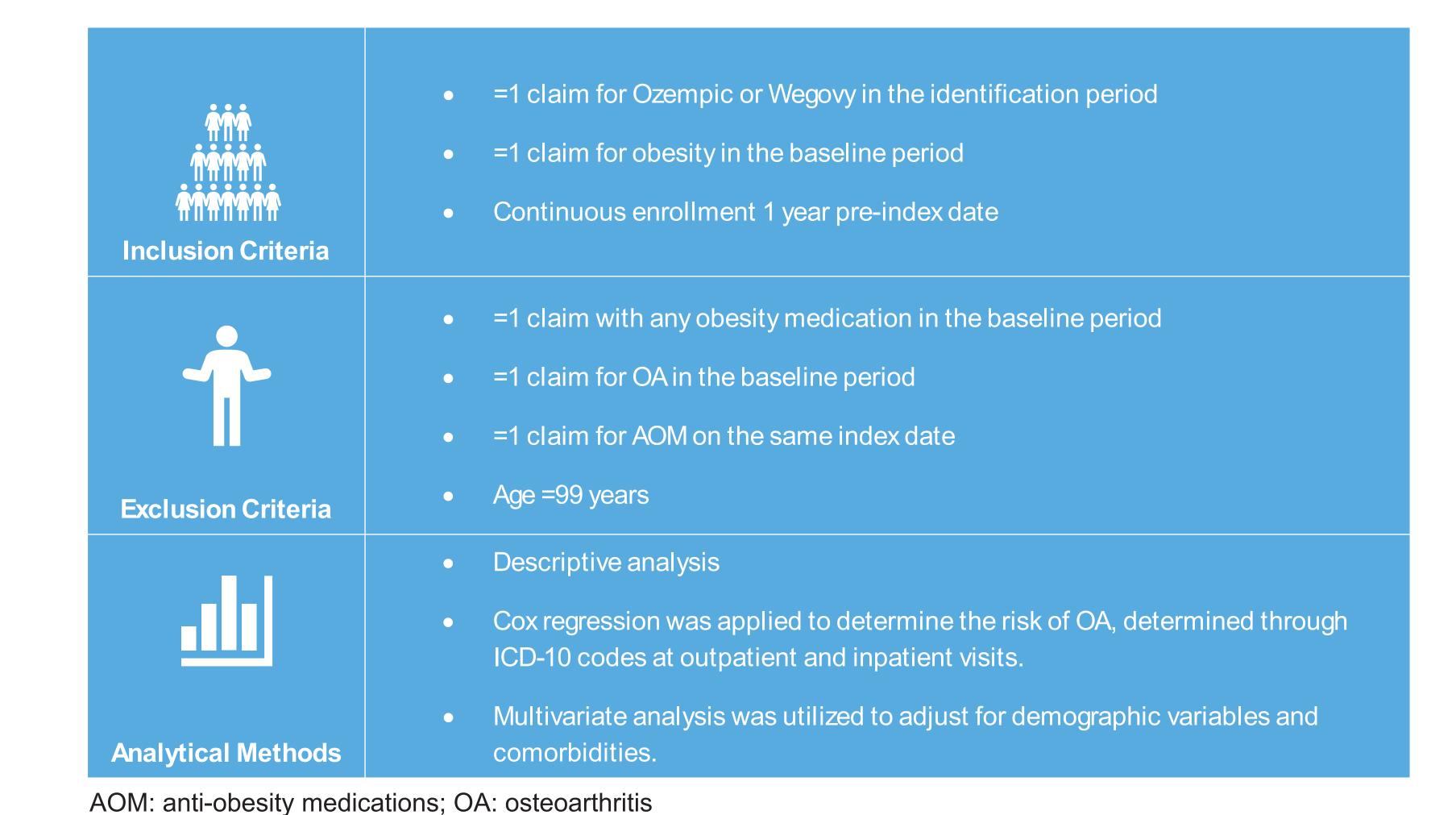
Osteoarthritis (OA) is a prevalent degenerative joint disorder.<sup>1,2</sup> While the effect of obesity on OA is well documented, less is known about the effect of approved anti-obesity medications (AOM) such as Ozempic or Wegovy. To date, no studies have analyzed the effect of Ozempic and Wegovy, both of which are formulations of semaglutide, on users' risk of developing OA.

#### OBJECTIVES

We aimed to determine the impact of Ozempic vs Wegovy utilization on the risk of OA among patients with obesity in the United States.

#### METHODS

We conducted a retrospective cohort study utilizing Kythera Medicare closed claims data from January 2020 to August 2022. Two cohorts of patients with obesity were identified: those with evidence of Ozempic use and Wegovy use, separately.



#### RESULTS

Patients in the Ozempic cohort were older (72.08 vs 70.93, p<0.0001), sicker (CDS ≥2: 82.25% vs 64.93%, p<0.0001) and significantly less likely to live in a region of high socioeconomic status (33.50% vs 40.72%, p=0.0065) than the Wegovy cohort.

Ozempic users also had higher prevalences of congestive heart failure (14.35% vs 6.96%, p=0.0001), hypertension (81.97% vs 73.04%, p<0.0001), peripheral vascular disease (13.34% vs 6.67%, p=0.0003), and diabetes (82.03% vs 22.03%, p<0.0001; Table 1) than Wegovy users.

Table 1. Baseline Characteristics of Patients with Ozempic and Wegovy Use

	Ozempic         Wegovy           (N = 6,733)         (N = 345)		P-Value	Std. diff.		
Characteristics	N/Mean	%SD	N/Mean	%/SD	Value	ota. um.
Age (years)	72.08	4.76	70.93	4.20	<0.0001	0.2442
Age Group: 65-70	3,016	44.79%	195	56.52%	<0.0001	0.2358
Age Group: 71-80	3,287	48.82%	141	40.87%	0.0040	0.1591
Age Group: 80+	430	6.39%	9	2.61%	0.0045	0.1567
Gender						
Male (%)	3,123	46.38%	115	33.33%	<0.0001	0.2623
Female (%)	3,610	53.62%	230	66.67%	<0.0001	0.2623
Comorbidity Score						
Charlson Comorbidity Index Score (≥2)	4,218	62.65%	95	27.54%	<0.0001	0.7283
Chronic Disease Score (≥2)	5,538	82.25%	224	64.93%	<0.0001	0.4473
Elixhauser Index Score (≥2)	6,334	94.07%	291	84.35%	<0.0001	0.3988
Socioeconomic Status						
Low	2,197	33.24%	96	28.74%	0.0880	0.0957
Medium	2,198	33.26%	102	30.54%	0.3030	0.0578
High	2,214	33.50%	136	40.72%	0.0065	0.1526
Baseline Osteoarthritis-related Comorbid	ities					
Hypertension	5,519	81.97%	252	73.04%	<0.0001	0.2303
Congestive Heart Failure	966	14.35%	24	6.96%	0.0001	0.2133
Myocardial Infarction	156	2.32%	3	0.87%	0.0768	0.0977
Cerebrovascular Disease	283	4.20%	11	3.19%	0.3569	0.0509
Peripheral Vascular Disease	898	13.34%	23	6.67%	0.0003	0.1984
Diabetes	5,523	82.03%	76	22.03%	<0.0001	1.5562
Chronic Obstructive Pulmonary Disease	1,217	18.08%	53	15.36%	0.2003	0.0707
Depression	1,031	15.31%	66	19.13%	0.0560	0.1055

# RESULTS (cont'd)

The Ozempic cohort had a lower OA risk than the Wegovy cohort after adjusting for demographic and clinical factors. However, Cox regression showed that this difference was not statistically significant (HR=0.90; p=0.4341).

On an interesting note, people receiving Ozempic had higher comorbidity and had a 17% greater risk for congestive heart failure, a 30% greater risk for chronic obstructive pulmonary disease, and a 22% greater risk for depression than patients on Wegovy (Table 2).

Table 2. Time to OA among Patients with Wegovy and Ozempic Use

		Conf. I		
	HR	Lower	Upper	p-value
Treatment				
Yes	0.90	0.85	0.95	<0.0001
No	1.00	1.00	1.00	
Age (years)				
65-70	0.91	0.87	0.95	<0.0001
71-80	0.98	0.94	1.02	0.3369
81+	1.00	1.00	1.00	
Gender				
Female	1.39	1.35	1.43	<.0001
Male	1.00	1.00	1.00	
Comorbidity				
Chronic Disease Score (≥2)	1.21	1.18	1.25	<0.0001
SES Score				
Low	1.01	0.98	1.05	0.5304
Medium	0.98	0.94	1.01	0.1907
High	1.00	1.00	1.00	
Comorbidities				
Hypertension	1.00	0.97	1.03	0.9175
Congestive Heart Failure	0.96	0.92	1.01	0.0858
Myocardial Infarction	0.91	0.81	1.02	0.0980
Cerebrovascular Disease	0.93	0.86	1.00	0.0645
Periphreal Vascular Disease	1.09	1.04	1.14	<0.0001
Diabetes	0.94	0.91	0.97	<0.0001
Chronic Obstructive Pulmonary Disease	1.09	1.05	1.13	<0.0001
Depression	1.18	1.13	1.23	<0.0001

## CONCLUSION

The absence of a statistically significant difference in the risk of OA between Ozempic users and Wegovy users demonstrates that one medication is no more effective than the other for reducing the risk of OA.

However, when patients with obesity receiving AOM were compared with those who did not, Cox regression demonstrated a 10% risk reduction in OA (p<0.0001). Therefore, it may be concluded that AOM use can reduce the risk of OA.

Table 3. Cox Regression Results for Time to OA

Treatment	HR	Confidence		
		Lower	Upper	P-Value
Yes	0.9	0.85	0.95	<0.0001
No	1	1	1	

HR: hazard ratio; OA: osteoarthritis

## REFERENCES

- I. Centers for Disease Control and Prevention. Osteoarthritis (OA) 2020. Available from: https://www.cdc.gov/arthritis/basics/osteoarthritis.htm. Accessed November 12, 2023.
- 2. Centers for Disease Control and Prevention. Arthritis Related Statistics 2023. Available from: https://www.cdc.gov/arthritis/data\_statistics/arthritis-related-stats.htm. Accessed November 14, 2023.



