Supplementary Material

Semaglutide Exposure and Risk of Oral Mucositis, Systemic Complications, and Mortality Among Patients with a History of Hematopoietic Stem-Cell Transplantation: A Propensity-Matched Real-World Cohort Study

Data source: TriNetX Compare Outcomes analyses run 13 August 2026 on the TriNetX [Deprecated 11-20-2024] COVID-19 Research Network (88 healthcare organisations). Unmatched analysis exported 17:47 UTC; propensity-matched analysis exported 17:31 UTC.

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Table S1. Cohort, exposure and outcome definitions

A. Cohorts and index events

Element	Cohort 1: HSCT with semaglutide	Cohort 2: HSCT without semaglutide
Age	18–90 years (most recent occurrence)	18–90 years (most recent occurrence)
Transplant status	ICD-10-CM Z94.84 (stem cell transplant status) — required	ICD-10-CM Z94.84 (stem cell transplant status) — required
Semaglutide exposure	RxNorm 1991302 (semaglutide) — required	RxNorm 1991302 (semaglutide) — excluded at any time
Index event	First date on which both Z94.84 and semaglutide were recorded	First date on which Z94.84 was recorded
Outcome window	Long-term: from 30 days after index, no end date; 3-month oral mucositis analysis: days 1–90 after index	Long-term: from 30 days after index, no end date; 3-month oral mucositis analysis: days 1–90 after index
Look-back limit	Index event within the past 20 years (0 patients excluded)	Index event within the past 20 years (0 patients excluded)
HCOs contributing patients	42 of 88	56 of 88
Patients meeting query criteria	1,356	49,965
Patients entering analysis (with index event)	1,355	49,818
Patients after 1:1 PSM	1,355	1,355
PSM covariates	Age at index; sex; race; ethnicity; external causes of morbidity (V00–Y99); type 2 diabetes mellitus (E11); ECOG performance status (LOINC 89247-1); body mass index (LOINC 39156-5). Social-determinant variables (likelihood of access to transportation, estimated household income, likelihood of health insurance) were specified but had no data.	Same as Cohort 1

Cohort 1 = HSCT recipients with semaglutide; Cohort 2 = HSCT recipients without semaglutide. HSCT, haematopoietic stem cell transplantation; PSM, propensity score matching; CI, confidence interval. ECOG, Eastern Cooperative Oncology Group; HCO, healthcare organisation; ICD-10-CM, International Classification of Diseases, 10th Revision, Clinical Modification.

Note: index dates are defined differently in the two cohorts (co-occurrence of transplant status and semaglutide vs transplant status alone).

B. Outcome definitions and analysis settings

Outcome	ICD-10-CM codes (any one qualifies)	Patients with outcome before window		
		Risk analysis	Kaplan–Meier	No. of instances
Stomatitis and related lesions	K12 Stomatitis and related lesions	Excl.	Excl.	Excl.
Oral mucositis (ulcerative) — 3-month outcome[b]	K12.3 Oral mucositis (ulcerative)	Excl.	Excl.	Excl.
All-cause mortality	Deceased (demographic flag); R99 Ill-defined and unknown cause of mortality	Excl.	Excl.	Excl.
Dry mouth / salivary disturbance	R68.2 Dry mouth, unspecified; K11.7 Disturbances of salivary secretion; T66.XXXA Radiation sickness, unspecified, initial encounter	Excl.	Excl.	Incl.[a]
Smell and taste disturbances	R43 Disturbances of smell and taste	Excl.	Excl.	Excl.
Systemic inflammation incl. sepsis (SIRS)	R65 Symptoms and signs specifically associated with systemic inflammation and infection	Excl.	Excl.	Excl.
Influenza and pneumonia	J09–J18 Influenza and pneumonia	Excl.	Excl.	Excl.
Graft-versus-host disease	D89.810 Acute GVHD; D89.811 Chronic GVHD; D89.812 Acute on chronic GVHD; D89.813 GVHD, unspecified	Excl.	Excl.	Incl.[a]
Food/fluid intake symptoms incl. weight loss	R63 Symptoms and signs concerning food and fluid intake	Excl.	Incl.[a]	Excl.
Candidal stomatitis	B37.0 Candidal stomatitis	Excl.	Excl.	Excl.

Excl. = patients with the outcome before the analysis window were excluded; Incl. = such patients were retained. For number-of-instances analyses, patients with zero instances were excluded and instances were counted by calendar date.

[a] Setting differs from the other outcomes; results for these analyses include patients with a prior history of the outcome. GVHD, graft-versus-host disease; SIRS, systemic inflammatory response syndrome.

[b] Oral mucositis is reported in the manuscript as a 3-month outcome (days 1–90 after index; separately matched cohort, Table S7). All other outcomes are reported over long-term follow-up (from day 30 after index), for which the same settings apply.

Table S2. Cohort flow and outcome-specific analytic denominators

A. Cohort flow

Step	Cohort 1: HSCT with semaglutide	Cohort 2: HSCT without semaglutide
Met cohort definition (age 18–90, Z94.84, semaglutide required / excluded)	1,356	49,965
Excluded by 20-year index-event look-back rule	0	0
Not carried forward into the comparative analysis by the platform[b]	1	147
Entered comparative analysis (available for matching)	1,355	49,818
After 1:1 propensity score matching	1,355	1,355
Included in the separate unmatched outcome analysis (Tables S4–S6, panels for unmatched cohorts)[c]	1,356	48,197
3-month oral mucositis analysis: entered analysis (available for matching)	1,162	42,330
3-month oral mucositis analysis: after 1:1 propensity score matching (including hematologic diagnoses)	1,152	1,152

B. Outcome-specific exclusions for a prior outcome code and analytic denominators

Outcome	Propensity score–matched (1,355 per cohort)				Unmatched: excluded	
	Cohort 1 excluded	Cohort 2 excluded	Cohort 1 analysed	Cohort 2 analysed	Cohort 1 (of 1,356)	Cohort 2 (of 48,197)
Stomatitis and related lesions	429 (31.7%)	419 (30.9%)	926	936	430 (31.7%)	15,911 (33.0%)
Oral mucositis (ulcerative)	395 (29.2%)	403 (29.7%)	960	952	396 (29.2%)	15,393 (31.9%)
Oral mucositis (K12.3), 3-month analysis (days 1–90)[a]	332 (28.8%)	191 (16.6%)	820	961	—	—
All-cause mortality	79 (5.8%)	49 (3.6%)	1,276	1,306	79 (5.8%)	2,136 (4.4%)
Dry mouth / salivary disturbance	85 (6.3%)	28 (2.1%)	1,270	1,327	85 (6.3%)	1,072 (2.2%)
Smell and taste disturbances	62 (4.6%)	23 (1.7%)	1,293	1,332	62 (4.6%)	819 (1.7%)
Systemic inflammation incl. sepsis (SIRS)	183 (13.5%)	97 (7.2%)	1,172	1,258	184 (13.6%)	4,157 (8.6%)
Influenza and pneumonia	505 (37.3%)	248 (18.3%)	850	1,107	506 (37.3%)	10,006 (20.8%)
Graft-versus-host disease	270 (19.9%)	139 (10.3%)	1,085	1,216	271 (20.0%)	5,876 (12.2%)
Food/fluid intake symptoms incl. weight loss	504 (37.2%)	249 (18.4%)	851	1,106	504 (37.2%)	9,509 (19.7%)
Candidal stomatitis	146 (10.8%)	75 (5.5%)	1,209	1,280	146 (10.8%)	3,258 (6.8%)

Cohort 1 = HSCT recipients with semaglutide; Cohort 2 = HSCT recipients without semaglutide. HSCT, haematopoietic stem cell transplantation; PSM, propensity score matching; CI, confidence interval. Exclusion counts apply to the risk analysis (and to Kaplan–Meier and instance analyses where the same setting was used; see Table S1B). Exclusion includes outcomes recorded before the index event and in the 30 days between the index event and the start of the window.

[a] From the separate 3-month TriNetX analysis (1,152 matched pairs; percentages are of 1,152); this analysis was run only in matched cohorts. The long-term oral mucositis row above is provided for reference. [b] The TriNetX output reports the counts at each step but does not itemize the reason for this difference. [c] Denominator implied by every unmatched outcome analysis (patients analysed plus patients excluded for a prior outcome code); it differs from the 49,818 shown at the propensity score matching step because the unmatched analysis was a separate TriNetX run.

Table S3. Baseline characteristics before and after propensity score matching

Characteristic	Before matching			After 1:1 propensity score matching		
	Cohort 1 (n = 1,355)	Cohort 2 (n = 49,818)	SMD	Cohort 1 (n = 1,355)	Cohort 2 (n = 1,355)	SMD
Demographics						
Age at index, years, mean ± SD	58.4 ± 12.6	54.8 ± 16.6	0.248	58.4 ± 12.6	58.5 ± 12.5	0.010
Female	734 (54.2)	20,483 (42.6)	0.233	734 (54.2)	730 (53.9)	0.006
Male	621 (45.8)	27,560 (57.4)	0.232	621 (45.8)	623 (46.0)	0.003
White	930 (68.6)	35,110 (73.1)	0.098	930 (68.6)	922 (68.0)	0.013
Black or African American	249 (18.4)	5,755 (12.0)	0.179	249 (18.4)	268 (19.8)	0.036
Asian	18 (1.3)	1,304 (2.7)	0.099	18 (1.3)	17 (1.3)	0.007
Other race	52 (3.8)	1,747 (3.6)	0.011	52 (3.8)	45 (3.3)	0.028
Unknown race	99 (7.3)	3,862 (8.0)	0.027	99 (7.3)	100 (7.4)	0.003
Hispanic or Latino	122 (9.0)	3,654 (7.6)	0.051	122 (9.0)	112 (8.3)	0.026
Not Hispanic or Latino	1,100 (81.2)	36,455 (75.9)	0.130	1,100 (81.2)	1,111 (82.0)	0.021
Unknown ethnicity	133 (9.8)	7,945 (16.5)	0.200	133 (9.8)	132 (9.7)	0.002
Diagnoses						
Type 2 diabetes mellitus (E11)	442 (32.6)	3,698 (7.7)	0.654	442 (32.6)	423 (31.2)	0.030
External causes of morbidity (V00–Y99)	48 (3.5)	2,850 (5.9)	0.113	48 (3.5)	42 (3.1)	0.025
Laboratory / clinical measures						
Body mass index, kg/m², mean ± SD	35.0 ± 8.1	28.3 ± 6.5	0.906	35.0 ± 8.1	33.4 ± 6.4	0.218[b]
BMI recorded	692 (51.1)	27,403 (57.0)	—	692 (51.1)	684 (50.5)	—
BMI < 18.5	10 (0.7)[a]	1,331 (2.8)	0.155	10 (0.7)[a]	10 (0.7)[a]	<0.001
BMI 18.5–24.9	47 (3.5)	8,793 (18.3)	0.490	47 (3.5)	39 (2.9)	0.034
BMI 25–29.9	159 (11.7)	11,439 (23.8)	0.320	159 (11.7)	155 (11.4)	0.009
BMI ≥ 30	515 (38.0)	10,842 (22.6)	0.341	515 (38.0)	527 (38.9)	0.018
ECOG performance status, mean ± SD	0.8 ± 0.8	0.5 ± 0.7	0.286	0.8 ± 0.8	0.3 ± 0.5	0.782[b]
ECOG recorded	12 (0.9)	534 (1.1)	—	12 (0.9)	10 (0.7)[a]	—
ECOG 0–1	10 (0.7)[a]	509 (1.1)	0.034	10 (0.7)[a]	10 (0.7)[a]	<0.001
ECOG 2–4	10 (0.7)[a]	78 (0.2)	0.086	10 (0.7)[a]	0 (0)	0.122[b]

Values are n (%) unless otherwise indicated. Cohort 1 = HSCT recipients with semaglutide; Cohort 2 = HSCT recipients without semaglutide. HSCT, haematopoietic stem cell transplantation; PSM, propensity score matching; CI, confidence interval. SMD, standardised mean difference; BMI, body mass index; ECOG, Eastern Cooperative Oncology Group performance status.

[a] TriNetX reports counts of 1–10 as 10 to protect patient privacy; true values may be lower. [b] Residual imbalance after matching (SMD > 0.1).

Likelihood of access to transportation, estimated household income and likelihood of health insurance were included in the matching model but had no recorded values in either cohort.

Table S4. Risk of outcomes in the unmatched and propensity-matched cohorts (long-term follow-up)

A. Unmatched cohorts (Cohort 1 n = 1,356; Cohort 2 n = 48,197 in the unmatched outcome analysis)

Outcome	Cohort 1, events/N (%)	Cohort 2, events/N (%)	Risk difference, % (95% CI)	Risk ratio (95% CI)	Odds ratio (95% CI)	p
Stomatitis and related lesions	37/926 (4.0%)	3,390/32,286 (10.5%)	-6.5 (-7.8 to -5.2)	0.38 (0.28–0.52)	0.35 (0.26–0.49)	<0.001
Oral mucositis (ulcerative)	29/960 (3.0%)	3,045/32,804 (9.3%)	-6.3 (-7.4 to -5.1)	0.33 (0.23–0.47)	0.30 (0.21–0.44)	<0.001
All-cause mortality	86/1,277 (6.7%)	11,158/46,061 (24.2%)	-17.5 (-18.9 to -16.1)	0.28 (0.23–0.34)	0.23 (0.18–0.28)	<0.001
Dry mouth / salivary disturbance	33/1,271 (2.6%)	1,767/47,125 (3.7%)	-1.2 (-2.0 to -0.3)	0.69 (0.49–0.97)	0.68 (0.48–0.97)	0.032
Smell and taste disturbances	22/1,294 (1.7%)	1,096/47,378 (2.3%)	-0.6 (-1.3 to 0.1)	0.73 (0.48–1.12)	0.73 (0.48–1.12)	0.146
Systemic inflammation incl. sepsis (SIRS)	73/1,172 (6.2%)	4,863/44,040 (11.0%)	-4.8 (-6.2 to -3.4)	0.56 (0.45–0.71)	0.54 (0.42–0.68)	<0.001
Influenza and pneumonia	99/850 (11.6%)	8,930/38,191 (23.4%)	-11.7 (-13.9 to -9.5)	0.50 (0.41–0.60)	0.43 (0.35–0.53)	<0.001
Graft-versus-host disease	40/1,085 (3.7%)	5,925/42,321 (14.0%)	-10.3 (-11.5 to -9.1)	0.26 (0.19–0.36)	0.23 (0.17–0.32)	<0.001
Food/fluid intake symptoms incl. weight loss	102/852 (12.0%)	6,579/38,688 (17.0%)	-5.0 (-7.2 to -2.8)	0.70 (0.59–0.85)	0.66 (0.54–0.82)	<0.001
Candidal stomatitis	29/1,210 (2.4%)	2,773/44,939 (6.2%)	-3.8 (-4.7 to -2.9)	0.39 (0.27–0.56)	0.37 (0.26–0.54)	<0.001

B. Propensity score–matched cohorts (1,355 per cohort)

Outcome	Cohort 1, events/N (%)	Cohort 2, events/N (%)	Risk difference, % (95% CI)	Risk ratio (95% CI)	Odds ratio (95% CI)	p
Stomatitis and related lesions	37/926 (4.0%)	99/936 (10.6%)	-6.6 (-8.9 to -4.2)	0.38 (0.26–0.55)	0.35 (0.24–0.52)	<0.001
Oral mucositis (ulcerative)	29/960 (3.0%)	91/952 (9.6%)	-6.5 (-8.7 to -4.4)	0.32 (0.21–0.47)	0.29 (0.19–0.45)	<0.001
All-cause mortality	86/1,276 (6.7%)	326/1,306 (25.0%)	-18.2 (-20.9 to -15.5)	0.27 (0.22–0.34)	0.22 (0.17–0.28)	<0.001
Dry mouth / salivary disturbance	33/1,270 (2.6%)	47/1,327 (3.5%)	-0.9 (-2.3 to 0.4)	0.73 (0.47–1.14)	0.73 (0.46–1.14)	0.164
Smell and taste disturbances	22/1,293 (1.7%)	29/1,332 (2.2%)	-0.5 (-1.5 to 0.6)	0.78 (0.45–1.35)	0.78 (0.44–1.36)	0.377
Systemic inflammation incl. sepsis (SIRS)	73/1,172 (6.2%)	165/1,258 (13.1%)	-6.9 (-9.2 to -4.6)	0.47 (0.36–0.62)	0.44 (0.33–0.59)	<0.001
Influenza and pneumonia	99/850 (11.6%)	264/1,107 (23.8%)	-12.2 (-15.5 to -8.9)	0.49 (0.40–0.60)	0.42 (0.33–0.54)	<0.001
Graft-versus-host disease	40/1,085 (3.7%)	151/1,216 (12.4%)	-8.7 (-10.9 to -6.6)	0.30 (0.21–0.42)	0.27 (0.19–0.39)	<0.001
Food/fluid intake symptoms incl. weight loss	102/851 (12.0%)	200/1,106 (18.1%)	-6.1 (-9.2 to -2.9)	0.66 (0.53–0.83)	0.62 (0.48–0.80)	<0.001
Candidal stomatitis	29/1,209 (2.4%)	82/1,280 (6.4%)	-4.0 (-5.6 to -2.4)	0.37 (0.25–0.57)	0.36 (0.23–0.55)	<0.001

Cohort 1 = HSCT recipients with semaglutide; Cohort 2 = HSCT recipients without semaglutide. HSCT, haematopoietic stem cell transplantation; PSM, propensity score matching; CI, confidence interval. Long-term follow-up: risk was assessed from 30 days after index to end of follow-up. The oral mucositis row is shown for reference; in the manuscript, oral mucositis is reported as a 3-month outcome (Table S7). Patients with the outcome before the window were excluded from denominators (see Table S2). p values are from the z-test for the risk difference.

Table S5. Kaplan–Meier time-to-event analysis and proportional-hazards testing (long-term follow-up)

A. Propensity score–matched cohorts

Outcome	Events/N		Survival probability at end of window		Log-rank	Hazard ratio (95% CI)	Proportionality test
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	χ^2 (p)		χ^2 (p)
Stomatitis and related lesions	37/926	99/936	92.96%	75.86%	14.833 (<0.001)	0.48 (0.32–0.70)	1.781 (0.182)
Oral mucositis (ulcerative)	29/960	91/952	94.41%	77.42%	20.490 (<0.001)	0.39 (0.25–0.59)	0.095 (0.758)
All-cause mortality	86/1,276	326/1,306	78.68%	0.00%[c]	58.913 (<0.001)	0.40 (0.31–0.51)	1.239 (0.266)
Dry mouth / salivary disturbance	33/1,270	47/1,327	93.58%	87.64%	0.206 (0.650)	1.11 (0.70–1.78)	2.712 (0.100)
Smell and taste disturbances	22/1,293	29/1,332	95.69%	90.31%	1.147 (0.284)	1.39 (0.76–2.55)	7.626 (0.006)[b]
Systemic inflammation incl. sepsis (SIRS)	73/1,172	165/1,258	82.12%	61.48%	4.113 (0.043)	0.74 (0.56–0.99)	0.017 (0.895)
Influenza and pneumonia	99/850	264/1,107	71.76%	47.32%[c]	10.939 (0.001)	0.67 (0.53–0.85)	1.913 (0.167)
Graft-versus-host disease	40/1,085	151/1,216	94.89%	77.08%	43.123 (<0.001)	0.33 (0.23–0.46)	0.289 (0.591)
Food/fluid intake symptoms incl. weight loss[a]	223/1,355	279/1,355	64.47%	0.00%[c]	0.754 (0.385)	1.08 (0.90–1.30)	29.549 (<0.001)[b]
Candidal stomatitis	29/1,209	82/1,280	89.71%	86.41%	7.947 (0.005)	0.54 (0.35–0.83)	13.877 (<0.001)[b]

B. Unmatched cohorts

Outcome	Events/N		Survival probability at end of window		Log-rank	Hazard ratio (95% CI)	Proportionality test
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	χ^2 (p)		χ^2 (p)
Stomatitis and related lesions	37/926	3,390/32,286	92.96%	75.42%	24.846 (<0.001)	0.45 (0.32–0.62)	3.707 (0.054)
Oral mucositis (ulcerative)	29/960	3,045/32,804	94.41%	78.49%	30.034 (<0.001)	0.37 (0.26–0.54)	0.498 (0.480)
All-cause mortality	86/1,277	11,158/46,061	78.68%	37.07%[c]	71.249 (<0.001)	0.41 (0.33–0.51)	1.965 (0.161)
Dry mouth / salivary disturbance	33/1,271	1,767/47,125	93.58%	89.53%	0.078 (0.780)	0.95 (0.67–1.34)	6.953 (0.008)[b]
Smell and taste disturbances	22/1,294	1,096/47,378	95.69%	94.12%	0.042 (0.837)	1.04 (0.69–1.60)	10.507 (0.001)[b]
Systemic inflammation incl. sepsis (SIRS)	73/1,172	4,863/44,040	82.12%	74.80%	3.429 (0.064)	0.80 (0.64–1.01)	0.745 (0.388)
Influenza and pneumonia	99/850	8,930/38,191	71.76%	45.86%[c]	17.155 (<0.001)	0.66 (0.54–0.80)	3.492 (0.062)
Graft-versus-host disease	40/1,085	5,925/42,321	94.89%	76.18%	74.038 (<0.001)	0.28 (0.20–0.38)	0.582 (0.446)
Food/fluid intake symptoms incl. weight loss[a]	223/1,356	10,140/48,197	64.47%	44.95%[c]	0.012 (0.913)	0.99 (0.87–1.13)	51.207 (<0.001)[b]
Candidal stomatitis	29/1,210	2,773/44,939	89.71%	81.72%	13.995 (<0.001)	0.50 (0.35–0.73)	29.488 (<0.001)[b]

Cohort 1 = HSCT recipients with semaglutide; Cohort 2 = HSCT recipients without semaglutide. HSCT, haematopoietic stem cell transplantation; PSM, propensity score matching; CI, confidence interval. Patients were censored after the last recorded fact in their record; daily time intervals were used.

[a] Patients with the outcome before the analysis window were retained for this Kaplan–Meier analysis. [b] Proportional-hazards assumption violated ($p < 0.05$); the hazard ratio should be interpreted as an average effect over follow-up. [c] Median survival reached in Cohort 2 (days): matched — mortality 5,024, influenza/pneumonia 4,985, food/fluid intake 6,324; unmatched — mortality 5,567, influenza/pneumonia 6,488, food/fluid intake 6,864. Median survival was not reached for any outcome in Cohort 1.

Table S6. Number of outcome instances among patients with each outcome (long-term follow-up)

A. Propensity score–matched cohorts

Outcome	Cohort 1			Cohort 2			t (df), p
	n with outcome	Mean ± SD	Median	n with outcome	Mean ± SD	Median	
Stomatitis and related lesions	37	1.838 ± 1.424	1	99	2.616 ± 3.206	1	-1.423 (134), 0.157
Oral mucositis (ulcerative)	29	1.793 ± 1.398	1	91	2.582 ± 3.081	1	-1.334 (118), 0.185
All-cause mortality	86	1 ± 0	1	326	1.009 ± 0.124	1	-0.689 (410), 0.491
Dry mouth / salivary disturbance[a]	41	1.829 ± 1.395	1	53	3.019 ± 3.445	1	-2.081 (92), 0.040
Smell and taste disturbances	22	1.773 ± 1.307	1	29	1.966 ± 2.514	1	-0.327 (49), 0.745
Systemic inflammation incl. sepsis (SIRS)	73	2.479 ± 3.805	1	165	2.176 ± 2.664	1	0.707 (236), 0.480
Influenza and pneumonia	99	4.808 ± 17.340	2	264	4.178 ± 7.511	2	0.483 (361), 0.630
Graft-versus-host disease[a]	194	18.541 ± 33.540	6	256	18.691 ± 27.811	8	-0.052 (448), 0.959
Food/fluid intake symptoms incl. weight loss	102	2.716 ± 4.517	1	200	2.810 ± 3.542	2	-0.199 (300), 0.842
Candidal stomatitis	29	1.690 ± 0.930	1	82	1.951 ± 1.852	1	-0.727 (109), 0.469

B. Unmatched cohorts

Outcome	Cohort 1			Cohort 2			t (df), p
	n with outcome	Mean ± SD	Median	n with outcome	Mean ± SD	Median	
Stomatitis and related lesions	37	1.838 ± 1.424	1	3,390	2.827 ± 4.746	1	-1.267 (3425), 0.205
Oral mucositis (ulcerative)	29	1.793 ± 1.398	1	3,045	2.862 ± 4.923	1	-1.168 (3072), 0.243
All-cause mortality	86	1 ± 0	1	11,158	1.026 ± 0.517	1	-0.463 (11242), 0.644
Dry mouth / salivary disturbance[a]	41	1.829 ± 1.395	1	1,964	2.563 ± 4.511	1	-1.040 (2003), 0.299
Smell and taste disturbances	22	1.773 ± 1.307	1	1,096	2.047 ± 2.465	1	-0.521 (1116), 0.602
Systemic inflammation incl. sepsis (SIRS)	73	2.479 ± 3.805	1	4,863	2.453 ± 5.429	1	0.042 (4934), 0.966
Influenza and pneumonia	99	4.808 ± 17.340	2	8,930	4.319 ± 8.442	2	0.564 (9027), 0.573
Graft-versus-host disease[a]	194	18.541 ± 33.540	6	10,360	26.567 ± 47.100	10	-2.362 (10552), 0.018
Food/fluid intake symptoms incl. weight loss	102	2.716 ± 4.517	1	6,579	3.141 ± 5.540	2	-0.772 (6679), 0.440
Candidal stomatitis	29	1.690 ± 0.930	1	2,773	2.528 ± 7.224	1	-0.625 (2800), 0.532

Cohort 1 = HSCT recipients with semaglutide; Cohort 2 = HSCT recipients without semaglutide. HSCT, haematopoietic stem cell transplantation; PSM, propensity score matching; CI, confidence interval. An instance is each calendar date on which the outcome was recorded within the analysis window; patients with zero instances were excluded. p values are from two-sample t-tests.

[a] Patients with the outcome before the window were retained for this analysis, so n with outcome differs from Table S4 (see Table S1B).

Table S7. Three-month oral mucositis analysis (days 1–90 after index)

A. Baseline characteristics before and after 1:1 propensity score matching

Characteristic	Before matching			After 1:1 propensity score matching		
	Cohort 1 (n = 1,162)	Cohort 2 (n = 42,330)	SMD	Cohort 1 (n = 1,152)	Cohort 2 (n = 1,152)	SMD
Demographics						
Age at index, years, mean ± SD	58.1 ± 12.9	54.5 ± 17.0	0.240	58.0 ± 12.9	57.8 ± 13.1	0.012
Female	640 (55.1)	17,261 (42.6)	0.252	631 (54.8)	633 (54.9)	0.003
Male	522 (44.9)	23,245 (57.4)	0.251	521 (45.2)	519 (45.1)	0.003
White	786 (67.6)	28,864 (71.2)	0.078	779 (67.6)	777 (67.4)	0.004
Black or African American	209 (18.0)	4,895 (12.1)	0.166	206 (17.9)	216 (18.8)	0.022
Asian	15 (1.3)	1,170 (2.9)	0.112	15 (1.3)	14 (1.2)	0.008
Other race	46 (4.0)	1,630 (4.0)	0.003	46 (4.0)	39 (3.4)	0.032
Unknown race	100 (8.6)	3,697 (9.1)	0.018	100 (8.7)	101 (8.8)	0.003
Hispanic or Latino	109 (9.4)	3,122 (7.7)	0.060	108 (9.4)	97 (8.4)	0.034
Not Hispanic or Latino	936 (80.6)	30,113 (74.3)	0.150	927 (80.5)	933 (81.0)	0.013
Unknown ethnicity	117 (10.1)	7,284 (18.0)	0.229	117 (10.2)	122 (10.6)	0.014
Diagnoses						
Type 2 diabetes mellitus (E11)	365 (31.4)	3,022 (7.5)	0.635	355 (30.8)	313 (27.2)	0.080
External causes of morbidity (V00–Y99)	30 (2.6)	2,008 (5.0)	0.125	30 (2.6)	23 (2.0)	0.041
Underlying hematologic diagnoses (included in matching for this analysis only)						
Multiple myeloma (C90.0)	283 (24.4)	12,518 (30.9)	0.147	280 (24.3)	287 (24.9)	0.014
Multiple myeloma not in remission (C90.00)	245 (21.1)	12,030 (29.7)	0.199	245 (21.3)	242 (21.0)	0.006
Multiple myeloma in remission (C90.01)	102 (8.8)	3,308 (8.2)	0.022	99 (8.6)	106 (9.2)	0.021
Myeloid leukemia (C92)	100 (8.6)	4,991 (12.3)	0.122	100 (8.7)	86 (7.5)	0.045
Lymphoid leukemia (C91)	40 (3.4)	2,377 (5.9)	0.115	40 (3.5)	32 (2.8)	0.040
Non-follicular lymphoma (C83)	56 (4.8)	2,815 (6.9)	0.091	56 (4.9)	60 (5.2)	0.016
Other/unspecified non-Hodgkin lymphoma (C85)	43 (3.7)	2,883 (7.1)	0.151	43 (3.7)	35 (3.0)	0.038
Aplastic and other anemias / marrow failure (D60–D64)	192 (16.5)	12,114 (29.9)	0.321	191 (16.6)	162 (14.1)	0.070
Other aplastic anemias / marrow failure (D61)	91 (7.8)	8,302 (20.5)	0.369	91 (7.9)	69 (6.0)	0.075
Other anemias (D64)	119 (10.2)	5,287 (13.0)	0.088	118 (10.2)	111 (9.6)	0.020
Coagulation defects / hemorrhagic conditions (D65–D69)	69 (5.9)	4,831 (11.9)	0.211	69 (6.0)	58 (5.0)	0.042
Other disorders of blood / blood-forming organs (D70–D77)	118 (10.2)	8,032 (19.8)	0.273	117 (10.2)	102 (8.9)	0.044
Laboratory / clinical measures						
Body mass index, kg/m², mean ± SD	35.0 ± 8.0	28.2 ± 6.5	0.936	35.0 ± 8.1	34.1 ± 6.8	0.118[b]
BMI recorded	570 (49.1)	22,270 (55.0)	—	560 (48.6)	526 (45.7)	—
BMI < 18.5	10 (0.9)[a]	1,051 (2.6)	0.133	10 (0.9)[a]	10 (0.9)[a]	<0.001
BMI 18.5–24.9	35 (3.0)	7,252 (17.9)	0.502	35 (3.0)	27 (2.3)	0.043
BMI 25–29.9	132 (11.4)	9,213 (22.7)	0.306	132 (11.5)	114 (9.9)	0.051
BMI ≥ 30	425 (36.6)	8,574 (21.2)	0.345	416 (36.1)	418 (36.3)	0.004
ECOG performance status, mean ± SD	0.8 ± 0.8	0.5 ± 0.7	0.284	0.8 ± 0.8	0.6 ± 0.9	0.199[b]

Characteristic	Before matching			After 1:1 propensity score matching		
	Cohort 1 (n = 1,162)	Cohort 2 (n = 42,330)	SMD	Cohort 1 (n = 1,152)	Cohort 2 (n = 1,152)	SMD
ECOG recorded	12 (1.0)	547 (1.3)	—	12 (1.0)	17 (1.5)	—
ECOG 0–1	10 (0.9)[a]	522 (1.3)	0.041	10 (0.9)[a]	15 (1.3)	0.042
ECOG 2–4	10 (0.9)[a]	82 (0.2)	0.091	10 (0.9)[a]	10 (0.9)[a]	<0.001

Values are n (%) unless otherwise indicated. All characteristics listed were included in the propensity model; likelihood of access to transportation, estimated household income and likelihood of health insurance were also specified but had no recorded values. Cohort 1 = HSCT recipients with semaglutide; Cohort 2 = HSCT recipients without semaglutide. HSCT, haematopoietic stem cell transplantation; PSM, propensity score matching; CI, confidence interval. SMD, standardised mean difference; BMI, body mass index; ECOG, Eastern Cooperative Oncology Group.

[a] TriNetX reports counts of 1–10 as 10. [b] Residual imbalance after matching (SMD > 0.1).

B. Oral mucositis (K12.3) within 90 days, matched cohorts (1,152 pairs)

Measure	Cohort 1	Cohort 2	Comparison
Excluded for a prior code	332 (28.8%)	191 (16.6%)	—
Events / analysed (risk)	22 / 820 (2.7%)	92 / 961 (9.6%)	Risk difference −6.9% (−9.1 to −4.7); z = −5.921; p < 0.001
Risk ratio / odds ratio	—	—	RR 0.28 (0.18–0.44); OR 0.26 (0.16–0.42)
Kaplan–Meier event-free survival at day 90	97.18%	89.98%	Log-rank χ^2 36.094; p < 0.001
Hazard ratio	—	—	HR 0.27 (0.17–0.42); proportionality χ^2 5.709, p = 0.017[c]
Instances among patients with the outcome, mean ± SD (median)	1.59 ± 1.26 (1)	1.69 ± 1.50 (1)	t = −0.271 (df 112); p = 0.787

Separate TriNetX Compare Outcomes analysis run 20 October 2026 on the same network, with the same cohort definitions and index events; observation window from day 1 to day 90 after the index event. [c] Proportional-hazards assumption violated; the risk difference and risk ratio are the principal estimates.