Supplementary Table 1. Search Strategy

Database	Search Strategy
PubMed/MEDLINE	("semaglutide"[MeSH Terms] OR "semaglutide"[Title/Abstract] OR "NN9531"[Title/Abstract] OR "Ozempic"[Title/Abstract] OR "Wegovy"[Title/Abstract]) AND ("obesity"[MeSH Terms] OR "obesity"[Title/Abstract] OR "overweight"[Title/Abstract] OR "adiposity"[Title/Abstract]) AND ("heart failure"[MeSH Terms] OR "heart failure"[Title/Abstract] OR "cardiac failure"[Title/Abstract]) AND ("ejection fraction, preserved"[MeSH Terms] OR "ejection fraction, preserved"[Title/Abstract] OR "HFpEF"[Title/Abstract])
CENTRAL	(semaglutide OR NN9531 OR Ozempic OR Wegovy) AND (obesity OR overweight OR adiposity) AND ("heart failure") AND (HFpEF OR "heart failure with preserved ejection fraction")
EMBASE	('semaglutide'/exp OR semaglutide OR NN9531 OR 'ozempic' OR 'wegovy') AND ('obesity'/exp OR obesity OR overweight OR adiposity) AND ('heart failure'/exp OR 'heart failure') AND ('heart failure with preserved ejection fraction'/exp OR HFpEF OR 'heart failure with preserved ejection fraction')
Google Scholar	• "Semaglutide" AND "obesity" AND "heart failure" AND "HFpEF" • "Semaglutide" AND "obesity" AND "heart failure with preserved ejection fraction" • "NN9531" AND "obesity" AND "HFpEF"
ClinicalTrials.gov	Keywords: • Semaglutide • Obesity • Heart Failure • HFpEF

Legend: HFpEF, Heart Failure with Preserved Ejection Fraction

Supplementary Table 2. Inclusion & Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Report on the effects of semaglutide in patients with both obesity and HFpEF.	Do not report original data (reviews, editorials, case reports, gray literature).
Report the outcomes of interest.	Do not provide sufficient data for extraction.
Are published in English.	Are not published in English.

Legend: HFpEF, Heart Failure with Preserved Ejection Fraction

Supplementary Table 3. Risk of Bias Assessment

Study ID	Study Design	Bias Domain	Risk of Bias (Low/Moderate/High)
Kosiborod 2024	RCT	Random sequence generation	Low
		Allocation concealment	Low
		Blinding of participants and personnel	Low
		Blinding of outcome assessment	Low
		Incomplete outcome data	Low
		Selective reporting	Low
Buttler 2023	RCT	Random sequence generation	Moderate
		Allocation concealment	Moderate
		Blinding of participants and personnel	High
		Blinding of outcome assessment	Low
		Incomplete outcome data	Low
		Selective reporting	Low
Rehman 2024	Observational	Selection bias	Moderate
		Information bias	Moderate
		Confounding	High
		Selective reporting	Low

Legend: RCT, Randomized Control Trial

Supplementary Table 4. Assessment of Heterogeneity

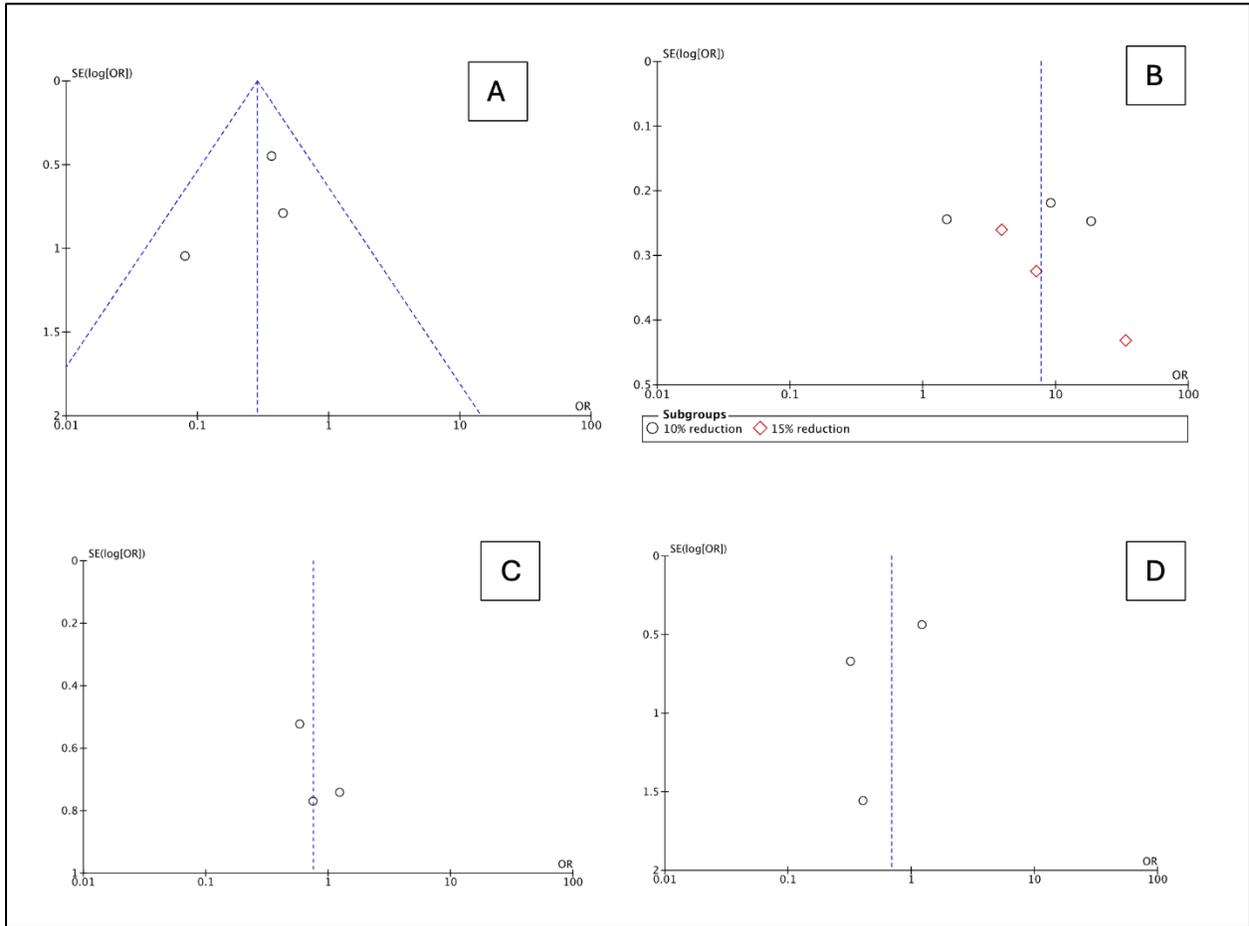| Outcome(s)	χ² Value	dF	p-value	I² (%)	Heterogeneity Level
Primary Endpoints					
Weight Reduction	75.28	5	<0.00001	93%	Very High
10% Weight Reduction	56.24	2	<0.00001	96%	Very High
15% Weight Reduction	19.57	2	<0.00001	93%	Very High
Adjudicated HF Event	2.11	2	0.35	5%	Low
Secondary Endpoints					
ACM	0.69	2	0.71	0%	Low
Cardiac Arrhythmias	2.98	2	0.23	33%	Moderate
Infections	0.95	2	0.62	0%	Low

Legend: ACM, All-cause Mortality; HF, Heart Failure

Supplementary Table 5. Leave One Out Sensitivity Analysis

Outcome(s)	LOO Sensitivity Analysis	I2
10% Weight Reduction	Regular	96%
	Leave Buttler 2023	97%
	Leave Kosiborod 2023	98%
	Leave Rehman	70%
15% Weight Reduction	Regular	90%
	Leave Buttler 2023	52%
	Leave Kosiborod 2023	95%
	Leave Rehman	88%

Legend: LOO, Leave One Out

Legend: A, Adjudicated Heart Failure; B, Weight Reduction; C, ACM; D, Cardiac Arrthymias