

Do asthma patients prescribed a GLP1 have improved asthma and weight loss outcomes?

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Introduction

- Obesity: a risk factor for asthma associated with poor asthma control, reduction may improve asthma control. ¹
- Glucagon-like peptide 1 receptor agonists (GLP1-RA), is prescribed for obesity treatment.²

Aims and Objectives

- Do GLP1-RAs impact asthma outcomes?

Methods

- UK Optimum Patient Care Research Database (OPCRD) includes data 26 million patients.
- Cases: over 18yo, active asthma, with a GLP1-RA, a BMI of greater than 30 kg/m².
- Controls: matched 5:1 on age, sex, a BMI >30 kg/m², time at which they were contributing data to the database, exacerbation and SABA use.
- Conditional logistic regression adjusting for BMI and OCS use.

Main outcomes

- Asthma Control Outcomes in the follow up year³:
 - Risk Domain Asthma Control (RDAC)
no recorded exacerbations, unplanned hospital attendances, or antibiotics with lower resp. review.
- Overall Asthma Control (OAC)
A positive RDAC score and fewer than 3 SABA prescriptions.

Results

- Cases: 10,111
- Controls: 50,555

Patient Flow	Patients	excluded
Patients in OPCRD	26,067,712	
Patients with treated asthma	2,153,306	23,914,406
Patients with aGLP1, an asthma Dx or Rx in last year	14,383	2,138,923
Other exclusions *	10,111	4,272

Study Population **10,111**

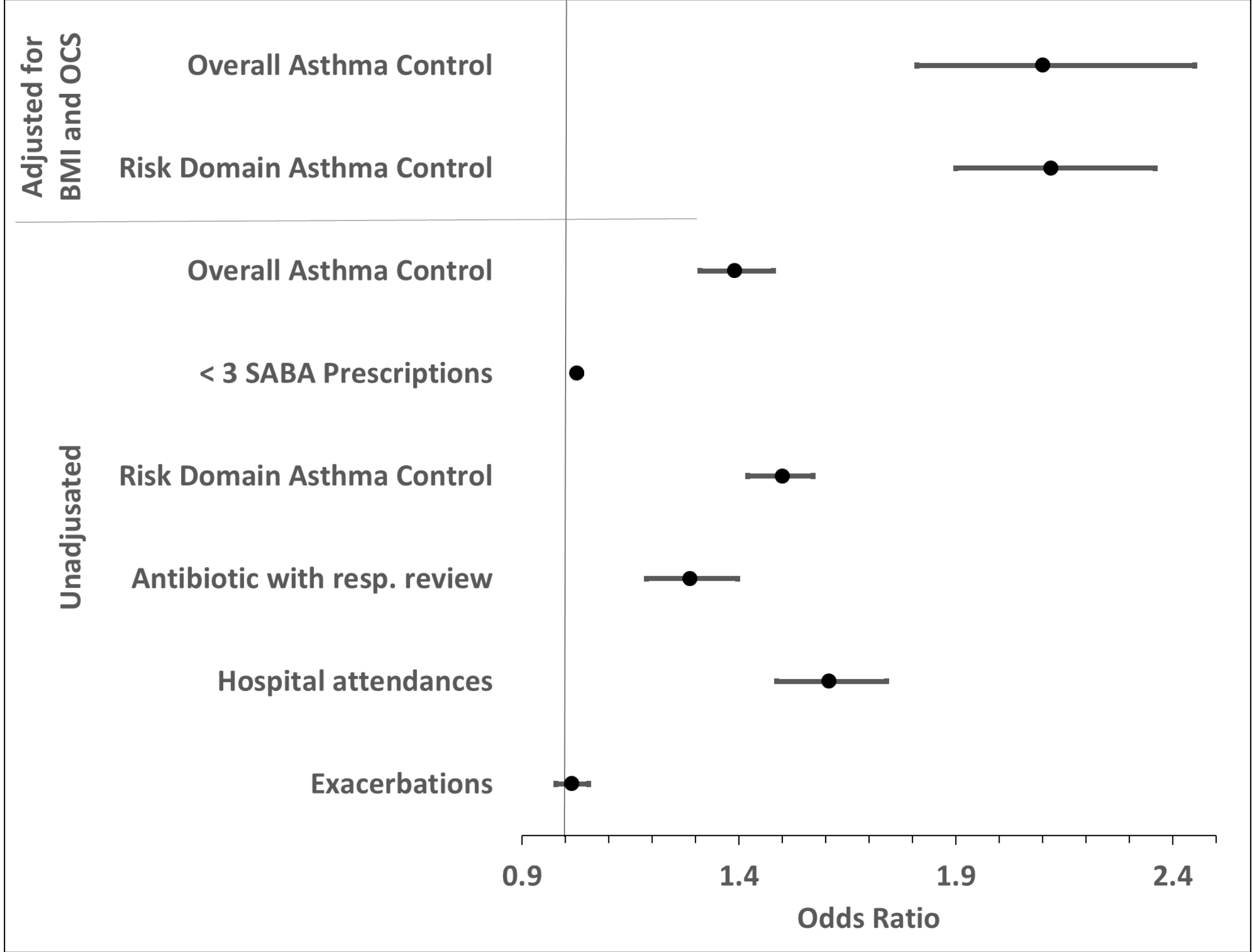
* Age <18, bariatric surgery, BMI <30, <12 months data

Table 1: Baseline Demographics

Variable	Category	Exposed cohort n = 10,111	Unexposed cohort n = 50,555	SMD
Age at index date - years	Mean	55.6	55.4	0.0
	Median	56.0	56.0	
Sex	Male	3,548 (35%)	17,740 (35%)	0.0
BMI – kg/m ²	30 to 34.9	2,724 (27%)	29,222 (58%)	4.6
	35 to 39.9	3,033 (30%)	12,523 (25%)	
	40 and above	4,354 (43%)	8,810 (17%)	
Smoking habit	Current	498 (5%)	2,697 (5%)	0.2
	Ex-smoker	4,450 (44%)	20,204 (40%)	
	Non-smoker	4,701 (46%)	25,482 (50%)	
	Missing	462 (5%)	2,172 (4%)	
GINA Step	1	1,364 (13%)	3,905 (8%)	0.1
	2	2,390 (24%)	12,802 (25%)	
	3	930 (9%)	5,501 (11%)	
	4	3,974 (39%)	20,520 (41%)	
	5	1,383 (14%)	5,813 (11%)	
	Missing or unclassifiable	70 (1%)	2,014 (4%)	
Risk Domain Asthma Control	Uncontrolled	3,906 (38.6%)	20,364 (40.3%)	0.03
Overall Asthma Control	Uncontrolled	6,825 (67.5%)	35,055 (69.3)	0.04
Acute episode of OCS use		3,134 (31.0%)	15,73 (30.8)	0.0
Secondary care contacts	1 or more	776 (7.7%)	5038 (10.0%)	0.09

SMD: Standardised Mean Difference

Figure 1: Asthma control outcomes



Odds ratio > 1 indicates better outcomes in GLP1-RA patients vs controls

- Weight loss was greater in the GLP1 patients
 - 6,218 (61%) cases, lost mean 3.5Kgs
 - 12,684 (25%) controls lost mean 0.9Kgs
- Cases have higher BMI, more ex-smokers and GINA steps 1 & 5 (Table 1).
- Asthma control was better in the GLP1-RA patients (Fig 1).

Discussion

- GLP1-RAs are associated with increased weight loss and improved asthma control.
- Strengths: Real-world data can quantify the wider benefits of GLP1-RA.
- Weaknesses: Follow-up weight data is potentially biased by non-attendances.

Conclusions

- Prescribed GLP1-RA for weight loss may have widespread benefits on co-morbidities relating to obesity including asthma.
- Quantifying these associations is useful when considering the health economic choices around using these drugs.
- Further work is required to define success in specific phenotypes of asthma including low T2 severe asthma

References:

1. Coleman B. Type 2 diabetes can cause lung disorders, new study finds, Imperial College News
2. NICE. NICE recommends new drug for people living with obesity, NICE News
3. Colice G, Chisholm A, Dima AL, Reddel HK, Burden A, Martin RJ, Brusselle G, Popov TA, von Ziegenweidt J, Price DB. Performance of database-derived severe exacerbations and asthma control measures in asthma: responsiveness and predictive utility in a UK primary care database with linked questionnaire data. Pragmat Obs Res. 2018 Aug 10;9:29-42

Disclosures

Heath Heatley is an employee of the Observational and Pragmatic Research Institute. This study was conducted by Observational and Pragmatic Research Institute.

