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Same treatment.
Different season.
Different response.

Seasonal Variation in Weight Loss Outcomes During Obesity Pharmacotherapy: A Real-World Analysis of 300 Patients

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1 Background

Weight loss during pharmacological obesity treatment may be influenced by seasonal behavioural and environmental factors.

Evidence on seasonal variation in weight loss and patient responses whilst on continuous treatment, or if it makes a difference when patients start their medication, is limited.

We aimed to assess whether seasonal differences in weight loss are observed during ongoing weight management pharmacotherapy exposure in a real-world setting

2 Objective

To evaluate seasonal variation in weight-loss outcomes during continuous pharmacological weight management and investigate whether the month of treatment initiation is associated with subsequent weight loss, with the aim of understanding the potential implications of seasonality for patients and clinical management.



3 Methods

Retrospective real-world analysis of 300 randomly selected patients receiving GLP-1RA / GLP-1 -GIP RA pharmacological weight management within a fully virtual, physician-led obesity clinic in the United Kingdom.

All patients remained on treatment without extended treatment breaks or treatment pauses.

Mean monthly weight loss was compared between:
→ summer (July September) and
→ winter (December-February).

Additional analysis: A separate cohort of 158 patients was stratified by treatment initiation month (May or November). Mean weight loss was compared between groups using Welch's unpaired two-sample t-test, with results expressed as mean ± standard deviation (SD).

4 Results

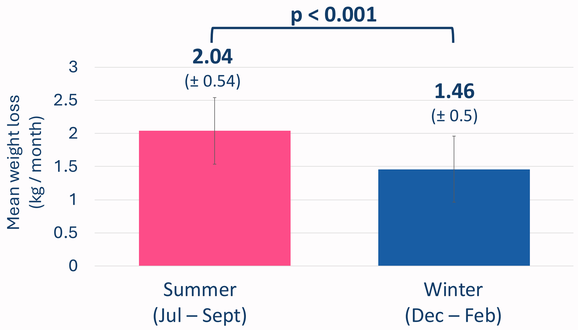
2.05 kg / month mean weight loss during summer

1.65 kg / month mean weight loss during winter

0.4 kg / month absolute difference in weight loss

24 % more weight loss during summer vs winter

Sub analysis: Mean Weight Loss (%) depending on which season you start medication



Potential factors contributing to seasonal variation (observed not proven)

- Greater opportunity for outdoor physical activity
- Longer daylight hours
- Better access to fresh fruit & vegetables
- Fewer "festive-period" or social pressure eating pressures

Season of treatment initiation and weight-loss outcomes. In a separate analysis of 158 patients stratified by month of treatment initiation, patients commencing GLP-1RA therapy in May (n=90) achieved a greater mean weight loss than those initiating treatment in November (n=68). Mean weight loss was 2.04 ± 0.54 kg in May starters compared with 1.46 ± 0.50 kg in November starters, representing an absolute difference of 0.59 kg (95% CI 0.42–0.75; Welch's unpaired t-test, p less than 0.001). Data displayed as mean ± SD.

5 Discussion

Seasonal behavioural and environmental influences may meaningfully impact weight loss outcomes even with continuous pharmacotherapy.

Clinicians may consider intensifying behavioural support during winter months, preparing patients for festive-period challenges and using summer months to reinforce physical activity and dietary change.

Limitations include the observational design and lack of adjustment for baseline weight, treatment duration, medication type, dose and adherence markers. Findings should be hypothesis generating and not considered causal.

6 Conclusion

→ In this real-world cohort of 300 patients receiving continuous obesity pharmacotherapy, mean monthly weight loss was greater during summer than winter (2.05 vs 1.65 kg/month), a difference of 0.40 kg/month (~24%).
→ The association between treatment initiation timing and weight-loss outcomes raises the possibility that seasonal factors may influence early treatment response in a similar manner to those already on continuous treatment.
→ Recognition of seasonal variation may help clinicians personalise obesity care and support better long-term outcomes for people living with overweight or obesity.

References None

Disclosures Author disclosure: Clinical Director and founder of Weight Loss Wales; previously employed by Novo Nordisk, Lilly and Amgen. Advisor to Evumed and speaker for Merck. Programme director Obesity MSc – University South Wales & Learna. Course director obesitycpd.co.uk