

# Mechanisms of Weight Change After Initiation of Biologic Therapy for Inflammatory Bowel Disease



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## Background

Biologic therapies have played an increasing role in suppression of inflammatory activity and slowed progression of disease in inflammatory bowel disease (IBD). Emerging data suggest rapid weight gain occurs among patients starting biologic therapies. However, the mechanisms driving these observations are unclear.

**Purpose:** To establish whether weight gain is a significant side effect of biologic therapy in IBD and propose the physiologic mechanism by which this takes place

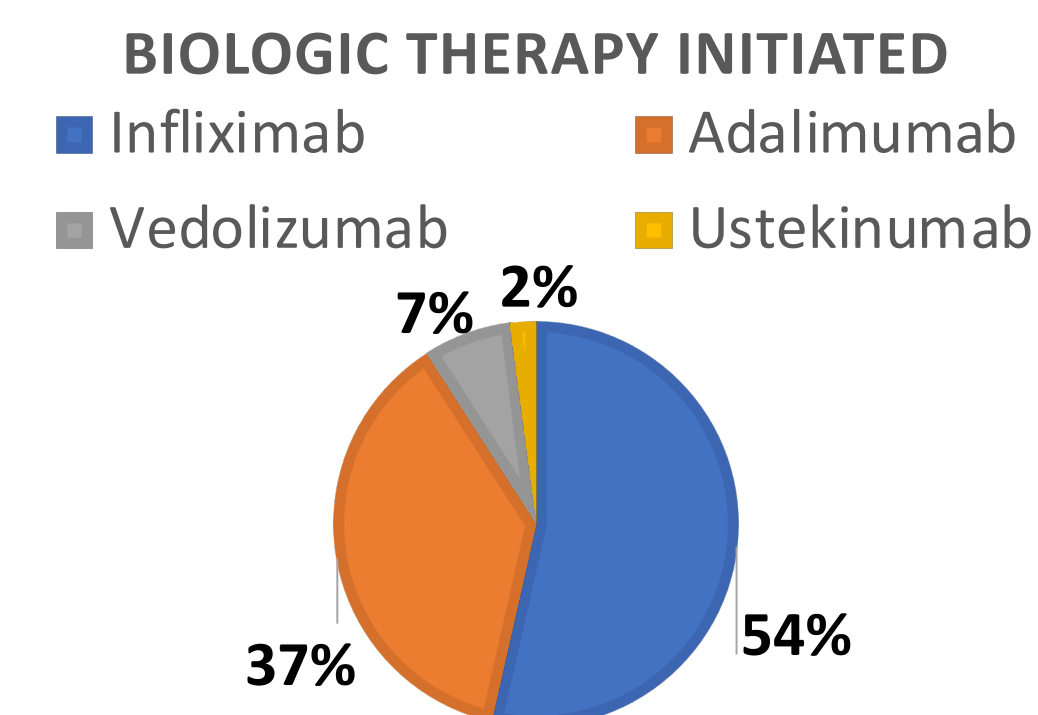
**Hypothesis:** biologic therapy-associated weight gain results from a correction of inflammation-related malnutrition rather than from an intrinsic medication effect.

## Methods

- Retrospective cohort study
- Patients at two tertiary-care academic centers who initiated biologic therapy for the first time
- Inclusion Criteria:** adults started on biologic therapy, >52 weeks of follow up, measurement of inflammation
- Exclusion Criteria:** malignancy, hx transplant, DM, Celiac Disease, altered gastrointestinal anatomy, TPN, enteral nutrition
- Longitudinal changes in weight evaluated over 52 weeks of follow-up, stratified according to presence of unmitigated inflammation (flare status, identified by inflammatory markers and endoscopic evidence) at weeks 8 and 52.
- Multivariable linear regression further used to evaluate weight change according to flare status, while adjusting for IBD type, age, sex, disease duration, and smoking status.

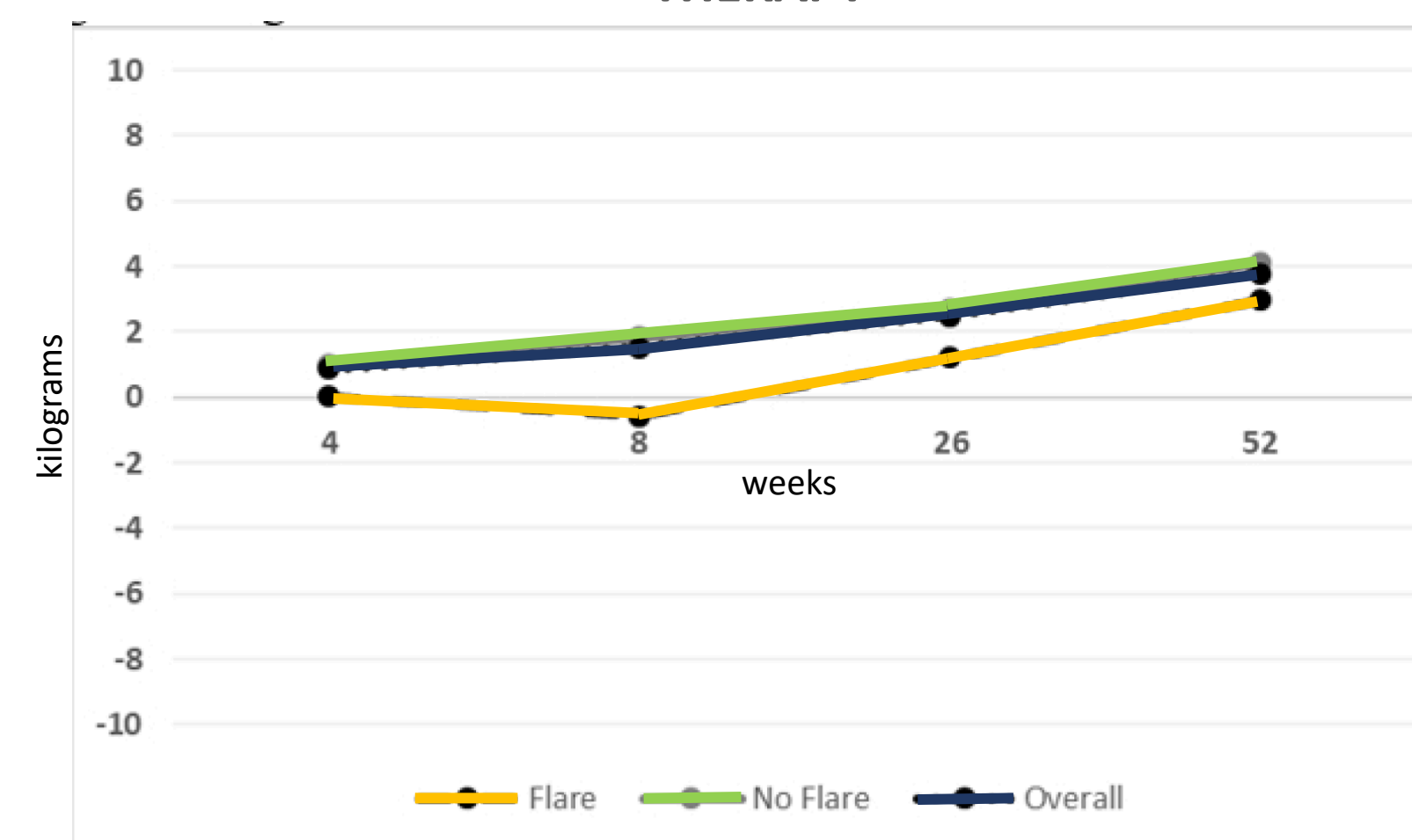
## Results

- The study included 202 patients with IBD (101 Crohn's disease, 97 ulcerative colitis, 4 indeterminate colitis), average age of 37.8 and average IBD duration of 7.6 years.

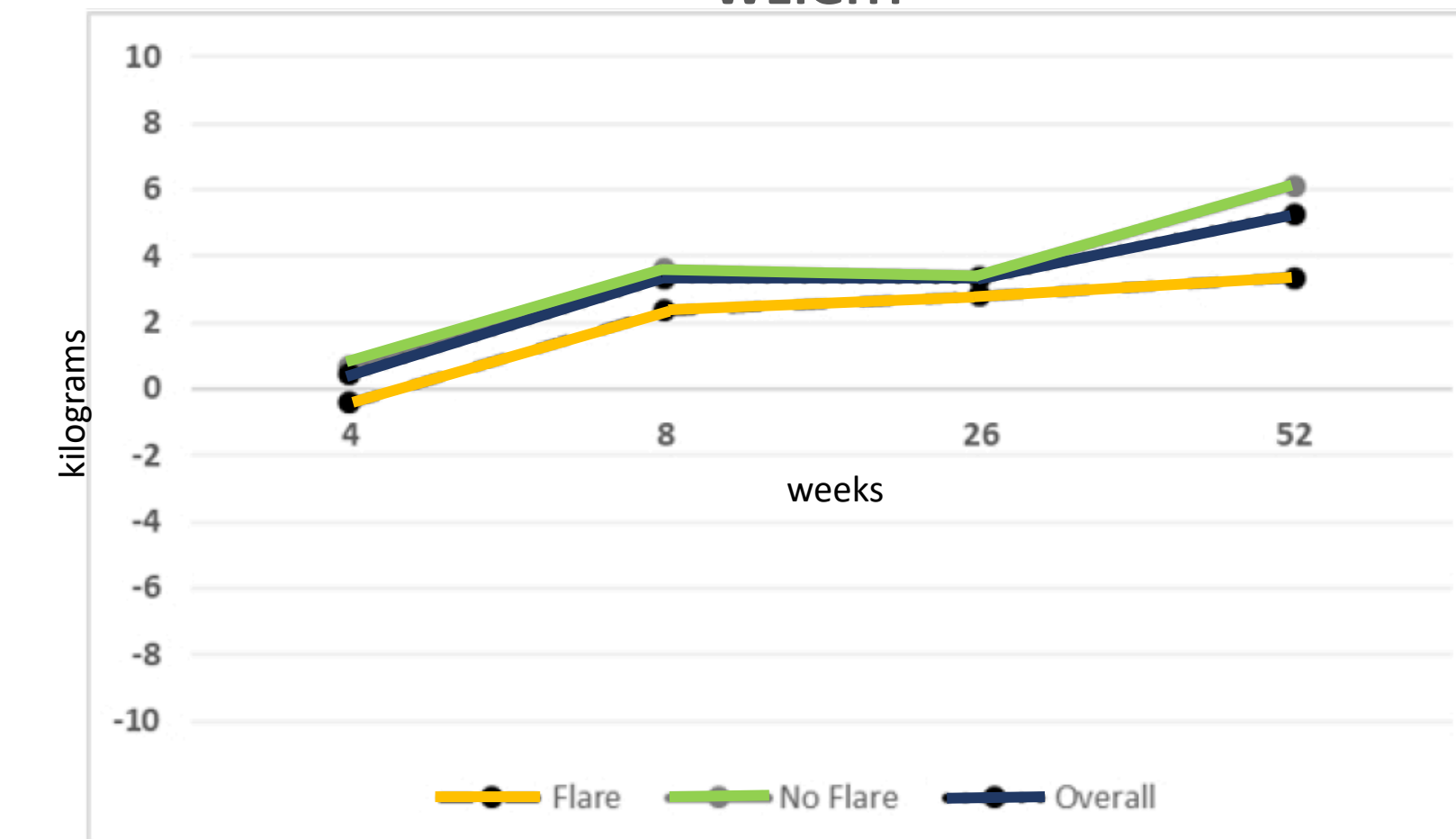


- When evaluating absolute weight change from time of biologic therapy initiation, patients overall had a steady increase in weight at 0.9, 1.5, 2.5, and 3.8 kg at weeks 4, 8, 26, and 52, respectively.
- Stratified by flare status, those experiencing a persistent flare did not observe a weight increase until week 26, while those without a flare had continued unabated weight increase.
- Adjusted for potential confounders, a persistent flare was associated with an early reduction in weight at week 8 (-2.2 kg; 95% CI -3.9 to -0.5), but not at subsequent time points.
- When evaluating weight change from normal baseline weight, patients overall experienced a weight increase regardless of flare status.

**AVERAGE WEIGHT CHANGE FROM INITIATION OF BIOLOGIC THERAPY**



**AVERAGE WEIGHT CHANGE IN KILOGRAMS FROM BASELINE WEIGHT**



## Discussion and Conclusions

- Findings suggest that correction of inflammation and its malabsorptive/catabolic effects is a mechanism of weight gain after initiation of biologic therapy.
- However, there appears to be an additional medication-related weight gain that occurs regardless of flare status.
- The weight gain also leads to excess weight above the patient's reported normal baseline.
- Limitations:** small sample size, potential for misclassification of flare status in documentation, possibility of inconsistent anthropometric measurement methods
- Further Studies:** larger sample size, degree of weight change across different biologic therapies

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