

## BACKGROUND

- In inflammatory bowel disease (IBD), adherence to biologic therapy is critical. An objective measure of adherence is the medication possession ratio (MPR).
- $$MPR = \frac{\text{sum of total days' supply of medication}}{\text{number of days in study period}}$$
- Prior work in injectable biologics showed an MPR < 0.86 significantly increases the risk of disease flare. (1)
- The objective of this study was to evaluate if medication non-adherence is associated with increased healthcare resource utilization.

## METHODS

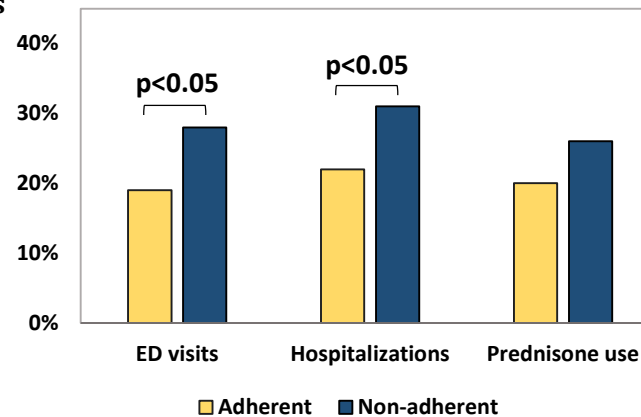
- This is a retrospective cohort study at a tertiary care IBD center of adults with IBD (Crohn's disease or ulcerative colitis [UC]) prescribed a self-injectable biologic therapy (adalimumab, certolizumab, golimumab, ustekinumab) between 2013-2016 who filled prescriptions through center's specialty pharmacy.
- Adherence was defined as MPR  $\geq$  0.86.
- Healthcare use outcomes obtained from electronic medical record after initiation of biologic.
- Statistical analysis was performed using Pearson testing, Cox regression modeling (controlled for age, sex, and disease type) and Wilcoxon rank-sum testing.

## RESULTS

**Table 1. Patient (pt) characteristics**

|                                   | n=460                       |
|-----------------------------------|-----------------------------|
| Age (median, range)               | 37 (23,66)                  |
| Sex (female)                      | 61%                         |
| Race (Caucasian)                  | 91%                         |
| Disease type                      | Crohn's disease 85%; UC 15% |
| Days of follow-up (median, range) | 921 (232,1414)              |

**Figure 1. Rates of healthcare use in adherent vs. non-adherent pts**

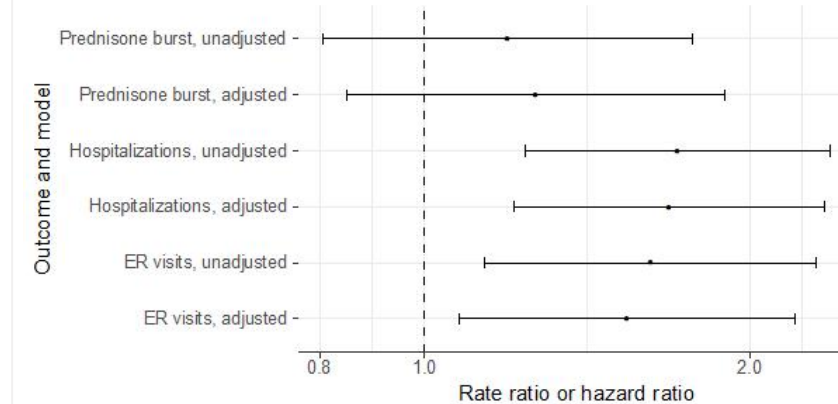


**Table 2. Mean healthcare use per pt ( $\pm$  standard deviation)**

|                  | Adherent           | Non-adherent       | p-value  |
|------------------|--------------------|--------------------|----------|
| ED visits        | 0.23 ( $\pm$ 0.52) | 0.38 ( $\pm$ 0.71) | p < 0.05 |
| Hospitalizations | 0.26 ( $\pm$ 0.54) | 0.45 ( $\pm$ 0.76) | p < 0.05 |
| Prednisone use   | 1.8 ( $\pm$ 1.2)   | 1.8 ( $\pm$ 1.1)   | p = NS   |

## RESULTS

**Figure 2. Rate of healthcare use between non-adherent and adherent pts in adjusted/unadjusted regression modelling**



**Table 3. Hazard ratios of healthcare use (95% confidence interval)**

|                  | Unadjusted        | Adjusted          | p-value  |
|------------------|-------------------|-------------------|----------|
| ED visits        | 1.62 (1.13, 2.30) | 1.69 (1.21, 2.35) | p < 0.05 |
| Hospitalizations | 1.72 (1.24, 2.37) | 1.54 (1.08, 2.20) | p < 0.05 |
| Prednisone use   | 1.19 (0.8, 1.77)  | 1.27 (0.85, 1.90) | p = NS   |

## CONCLUSIONS

In patients with moderate-to-severe IBD on self-injectable biologic medication, non-adherence (MPR < 0.86) is associated with increased risk of hospitalization and ED visits.