Healthcare Utilization in Patients With Non-adherence to Self-injectable Biologic Medications
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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 ≥ 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

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n=460</th>
<th>Age (median, range)</th>
<th>37 (23,66)</th>
<th>Sex (female)</th>
<th>61%</th>
<th>Race (Caucasian)</th>
<th>91%</th>
<th>Disease type</th>
<th>Crohn’s disease 85%; UC 15%</th>
<th>Days of follow-up (median, range)</th>
<th>921 (232,1414)</th>
</tr>
</thead>
</table>

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

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

Table 2. Mean healthcare use per pt (± standard deviation)

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<th>Healthcare Use</th>
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<th>Non-adherent</th>
<th>p-value</th>
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<td>ED visits</td>
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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.