

The Impact of Treatment Switch Among Prevalent Patients with Crohn's Disease Treated with a First-Line Biologic: A US Retrospective Claims Database Study

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CONCLUSIONS

- In this real-world study, patients with CD who had a treatment switch incurred significantly higher HRU and healthcare costs
- Study limitations include the retrospective and descriptive analytical design; the fixed time window to evaluate treatment switching, which may have excluded later switchers (potential misclassification bias); the inability to distinguish newly diagnosed patients from others, as switch rates may differ between those groups; and the absence of clinical variables indicating disease severity
- The study findings suggest a potential unmet need with current treatment options and highlight the impact of switching biologics on the economic burden of patients with CD

BACKGROUND/OBJECTIVE

- Crohn's disease (CD) is a chronic inflammatory bowel condition that requires lifelong management¹
- Treatment switching often occurs with biologic use among patients with CD and has been associated with worsened clinical symptoms and functional impairment²⁻⁵
- Little is known, however, about the impact of treatment switching on healthcare resource utilization (HRU) and costs in CD¹

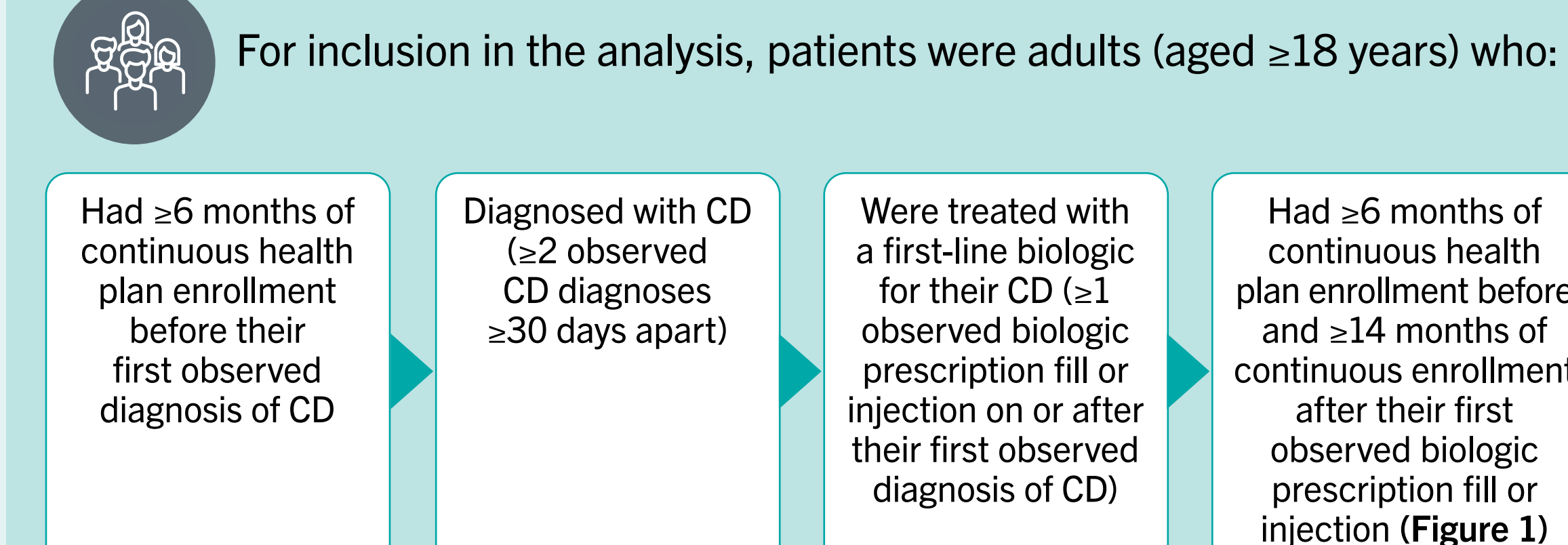
Objective: We conducted a database analysis to assess the economic burden associated with treatment switching among adults with CD in the United States

METHODS

Data Source

Data were analyzed from the IBM[®] MarketScan[®] Commercial Subset, a database consisting of employer- and health plan-sourced data containing medical and drug data for beneficiaries covered by employer-sponsored private health insurance
Data were obtained from the period October 1, 2015, to March 31, 2020

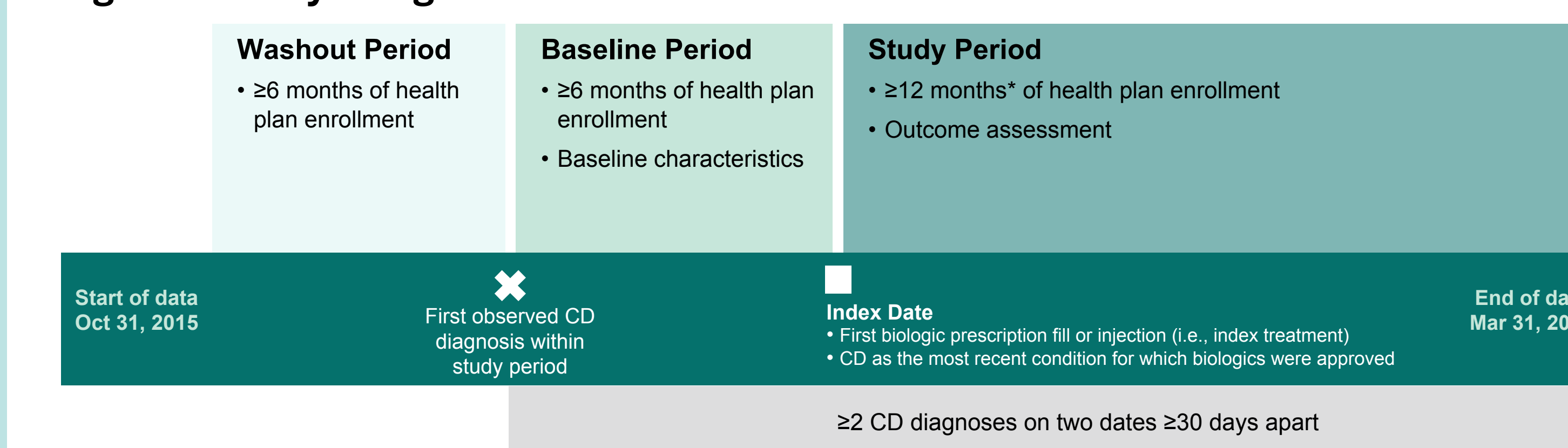
Study Population



Statistical Analyses

- The index date was defined as the first prescription fill for a biologic
- Patients were classified into switchers or non-switchers based on whether they (1) switched to another biologic treatment for CD, or (2) switched to 5-aminosalicylic acid or immunomodulator after a discontinuation of 60 days at any time during the 12-month study period after the index date
- HRU and cost outcomes (in 2020 US dollars) were evaluated for a 12-month period after the index date
- Mean time to treatment switch was estimated using Kaplan-Meier analyses
- Outcomes were compared between switchers and non-switchers using unadjusted linear regressions for continuous variables and unadjusted logistic regressions for categorical variables

Figure 1. Study Design



*An extra 2-month follow-up period at the end of the study period (total of 14 months) was required in the sample selection for the assessment of treatment discontinuation. CD, Crohn's disease.

RESULTS

- Among 4,006 patients included in the study, 640 were switchers and 3,366 were non-switchers (Table 1)
- Overall, mean age was 39.5 years and 51% were female
- Patient demographics, disease characteristics, and comorbidities were similar between the groups
 - The standardized difference between treatment groups exceeded 0.2 only for co-use of corticosteroids (Table 1)
- Time to treatment switch is shown in Figure 2

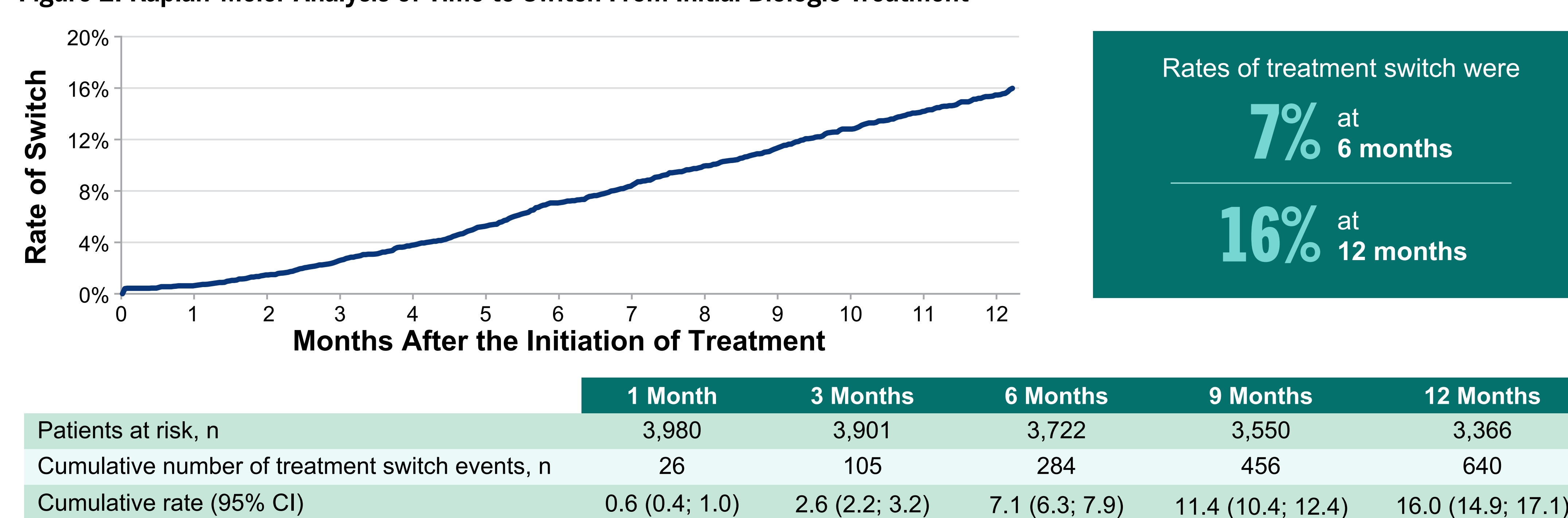
Table 1. Patient Demographics and Clinical Characteristics

	Switchers (n=640 [16%])	Non-switchers (n=3,366 [84%])
Age in years, mean ±SD (median)	38.9 ±13.9 (38.5)	39.6 ±14.1 (39.0)
Female, % (n)	58% 374	50% 1665
Time in months from first CD diagnosis to index date, mean ±SD (median)	5.7 ±8.3 (2.3)	4.7 ±7.2 (1.8)
Charlson Comorbidity Index, mean ±SD (median)	0.3 ±0.7 (0.0)	0.3 ±0.8 (0.0)

	Switchers (n=640 [16%])	Non-switchers (n=3,366 [84%])
CD-related comorbidities, n (%)		
Pain	323 (51)	1496 (44)
Diarrhea	230 (36)	952 (28)
Cardiovascular disease	137 (21)	717 (21)
Anemia	146 (23)	655 (20)
Weight loss	74 (12)	312 (9)
Fatigue	77 (12)	298 (9)
Depression	72 (11)	284 (8)
Perianal fistula	43 (7)	231 (7)
Intestinal stricture	42 (7)	225 (7)
IV corticosteroid	22 (3)	92 (3)
Fistula of the intestine	11 (2)	71 (2)
Renal comorbidity	4 (1)	31 (1)
Co-medications, n (%)		
Corticosteroids*	400 (63)	1583 (47)
5-ASA	166 (26)	680 (20)
Antibiotics	172 (27)	760 (23)
Immunomodulators	101 (16)	585 (17)

Demographic characteristics are at the time of the index date. CD and treatment characteristics are from the 6-month baseline period before the index date. *Standardized difference between groups of 0.31. 5-ASA, 5-aminosalicylic acid; CD, Crohn's disease; IV, intravenous; SD, standard deviation.

Figure 2. Kaplan-Meier Analysis of Time to Switch From Initial Biologic Treatment



References

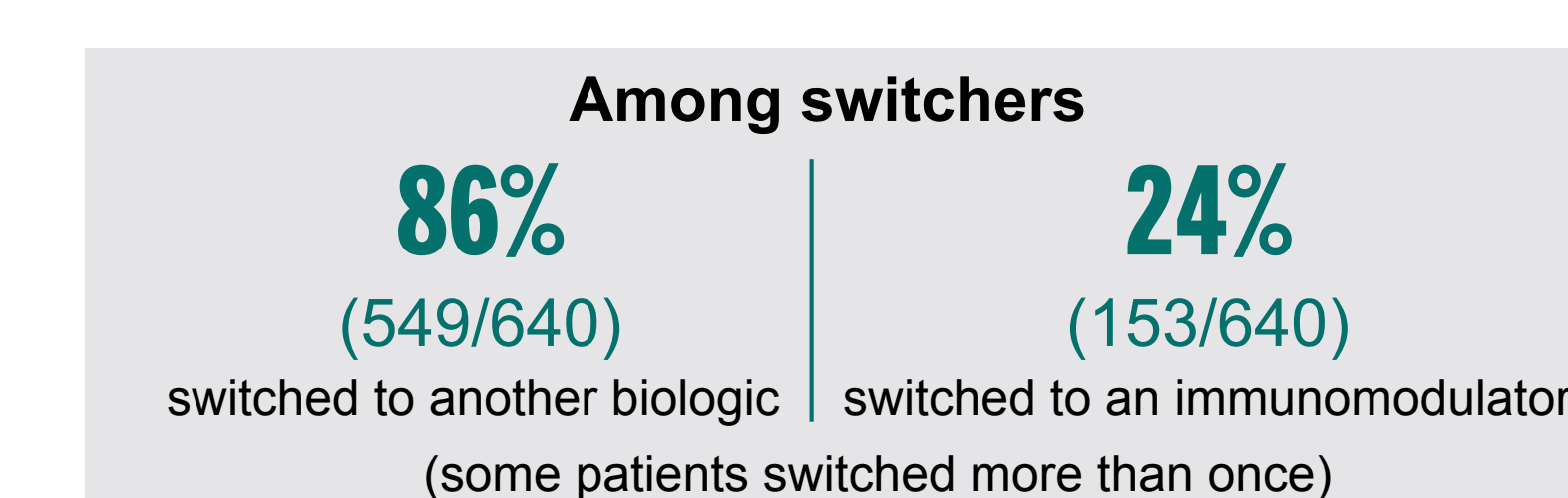
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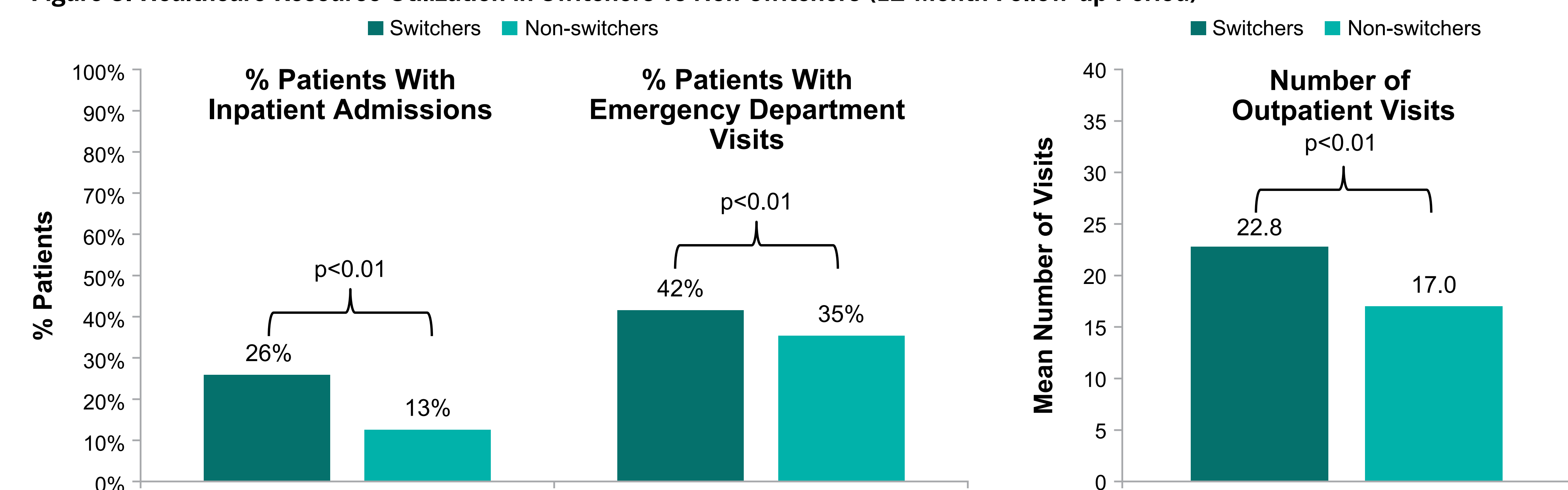
Disclosures

Myriane Sanon, Sumesh Kachroo, Timothy Hoops, and Dominik Naessens are employees of the Janssen Pharmaceutical Companies of Johnson & Johnson. Patrick Gagnon-Sanschagrin, Mikhail Davidson, Annie Guerin, and Martin Cloutier are employees of Analysis Group, Inc, which was hired by Janssen to perform study analyses. Cynthia Willey is a consultant for Goldfinch Biotech Inc. and Otsuka Pharmaceutical, and a scientific advisor or member of the *Journal of Clinical Therapeutics*, Editorial Board.



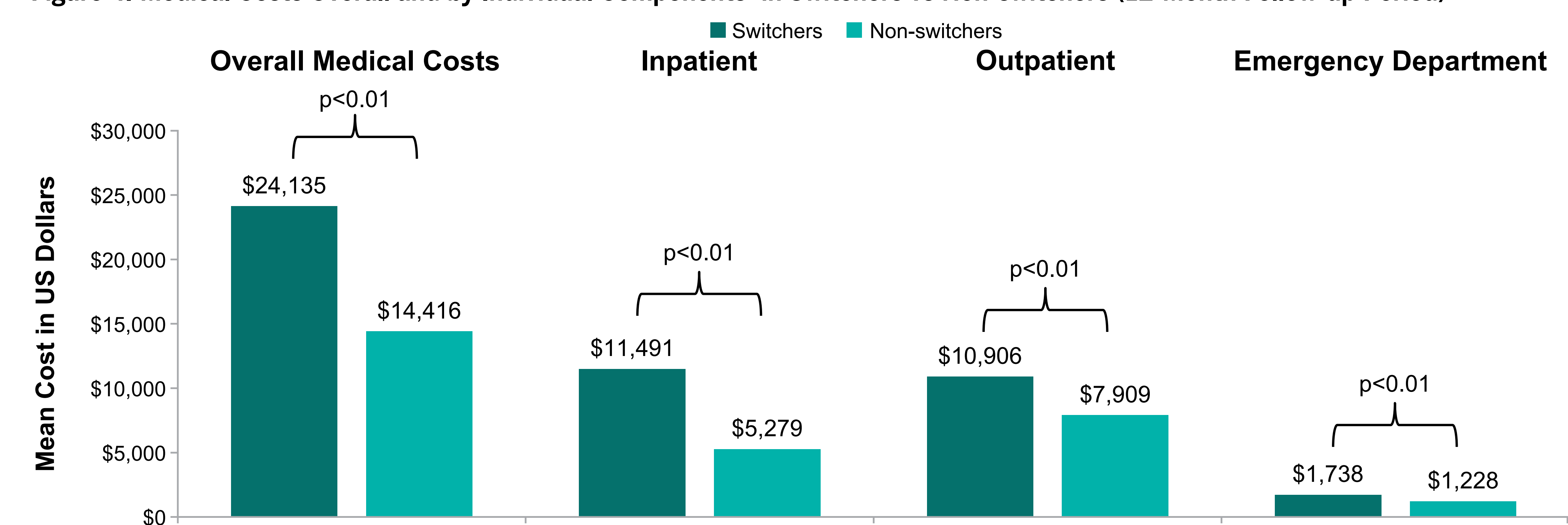
- Regarding HRU, switchers had significantly higher rates of inpatient admissions, emergency department visits, and number of outpatient visits compared to non-switchers (Figure 3)
- Additionally, the rate of prolonged corticosteroid use (≥90 days) was higher in switchers compared to non-switchers (32% vs 8%, p<0.01)

Figure 3. Healthcare Resource Utilization in Switchers vs Non-switchers (12-Month Follow-up Period)



- Total all-cause healthcare costs were significantly higher among switchers than non-switchers (\$95,689 versus \$81,027, respectively, p<0.01), which was mainly driven by higher medical costs (Figure 4)
- Among age groups, switchers 30–39 years incurred the highest total healthcare costs (\$100,676 vs \$78,265, p<0.01)

Figure 4. Medical Costs Overall and by Individual Components* in Switchers vs Non-switchers (12-Month Follow-up Period)



*Medical costs include inpatient, outpatient, and emergency department costs.