RWD281

Leveraging Nationwide Health and Insurance Records to Track Biologic Drug Diffusion in IBD: A 20-Year Real-World Study from Israel

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Background

Inflammatory bowel disease (IBD), comprising of Crohn's disease (CD) and ulcerative colitis (UC), is a chronic relapsing incurable intestinal inflammatory disorder of the gastrointestinal tract. Biological therapy can significantly improve health-related quality-of-life and prevent disease-related complications. In the last 20 years, multiple biologic therapies for IBD have been introduced and reimbursed in Israel, yet their real-world adoption and diffusion remain underexplored.

Objectives

To examine how nationwide electronic health and insurance records can be used to track real-world adoption and diffusion of biologic drugs (biologics) in IBD patients across Israel's universal healthcare system.

Methods

- Nationwide retrospective cohort study
- Patients of all four Israeli health maintenance organizations (HMOs)
  Covering ~98% of population
- 1998-2018, up to 20 years follow-up
- Outcome: Biologics Treatment Initiation, stratified by:
  - Disease Type
  - Drug Type
- Diffusion trends, survival analysis and multivariable Cox models

N=49,267

Mean age at onset: 36.8 ± 18.5

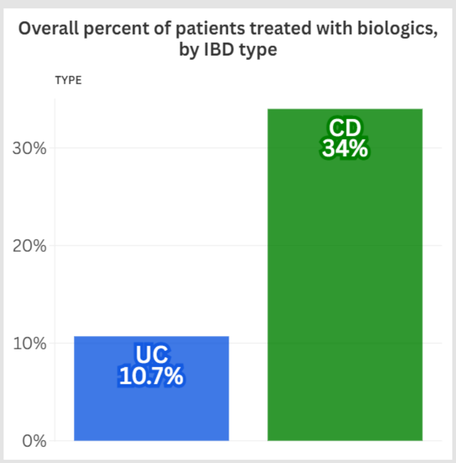
Male: 50.6%

Mean follow-up: 11.0 ± 1.2 years

CD: 53.3%, UC: 46.7%

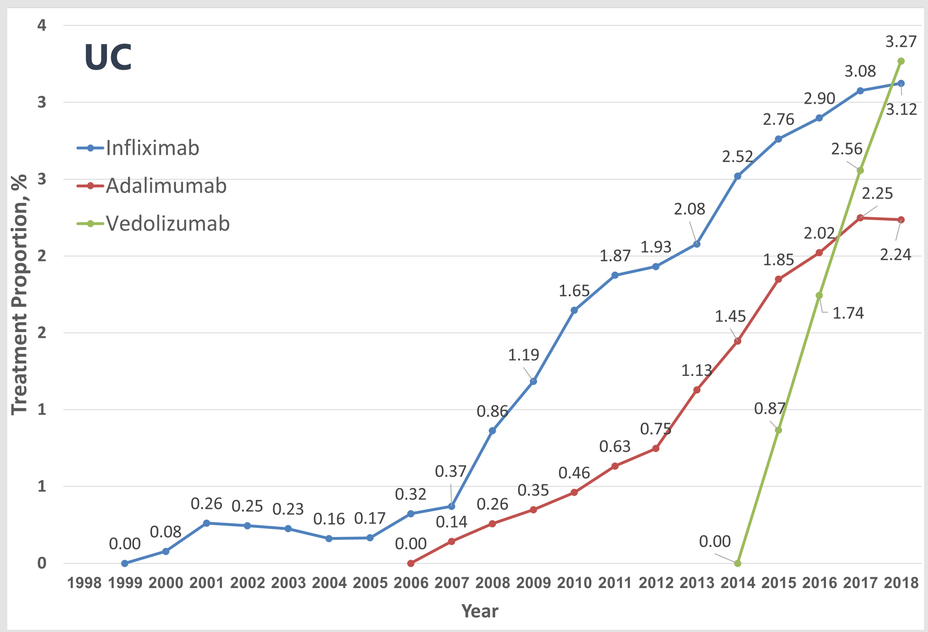
Results

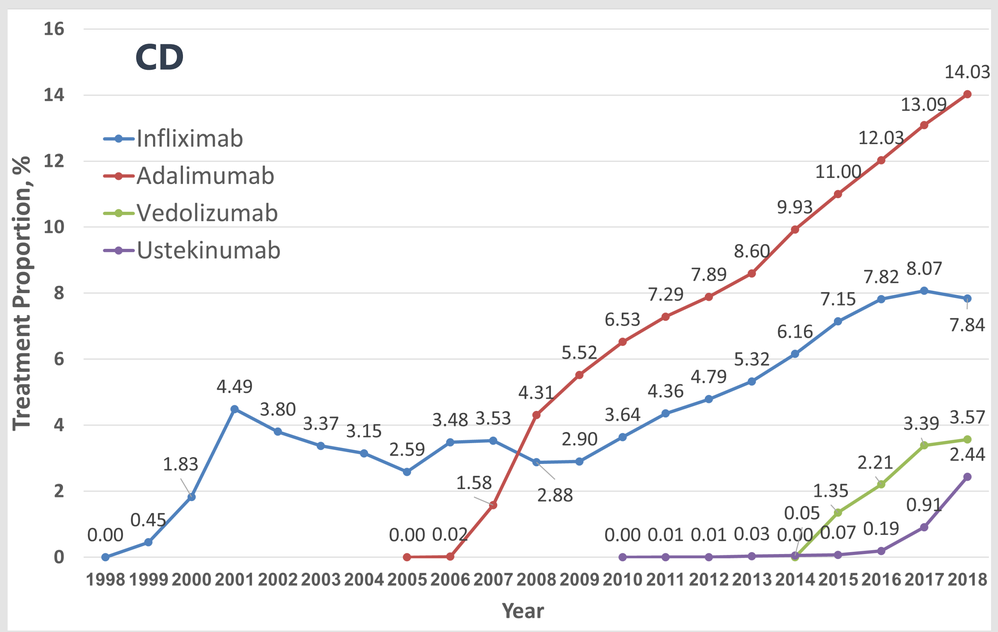
1. Biologics Adoption



- Pediatric-onset and high-risk patients (e.g., surgery or corticosteroid users) adopted biologics more & earlier.

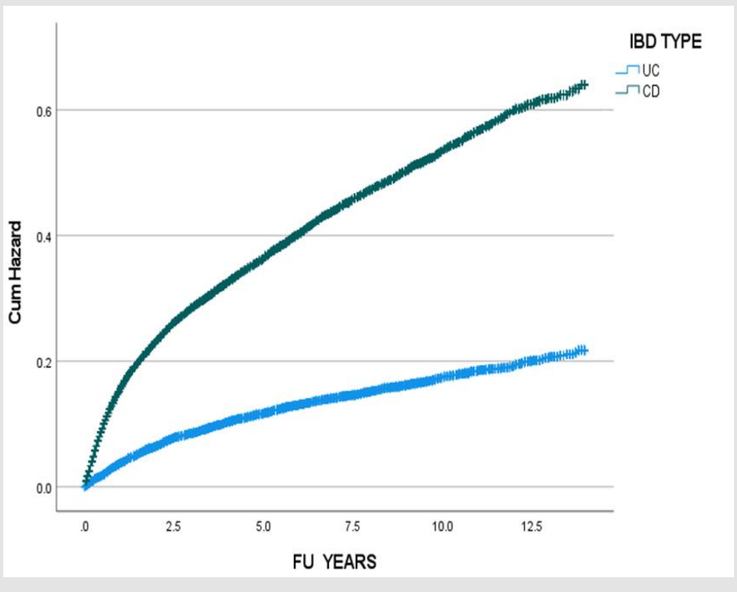
2. Diffusion of Biologics by Drug Type





- Diffusion curves followed expected S-shapes, esp. for infliximab. Uptake of newer biologics accelerated following market entry.

3. Rate & Predictors of Biologics Adoption



Higher adoption

- Jewish population
- Male
- Pediatrics patients
- Previous surgery
- Previous immunotherapy
- Onset calendar year

Lower adoption

- Older adult patients
- Previous 5ASA treatment

Conclusions & Recommendations

This study demonstrates the potential of integrated national health and insurance records to monitor long-term real-world therapeutic patterns.

The Israeli IBD data infrastructure enabled comprehensive, population-based analysis of biologic drugs adoption and diffusion, offering a replicable model for health systems aiming to leverage real-world data for treatment monitoring, equity assessment, and policy planning.

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