Effectiveness of switching from intravenous to subcutaneous infliximab in inflammatory bowel disease patients: A combined analysis of real-world evidence

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BACKGROUND

- Since approval, numerous inflammatory bowel disease (IBD) patients have been treated with subcutaneous (SC) infliximab (IFX), but real-life data based on a large multi-national population of patients switching from intravenous (IV) to SC IFX is lacking.

METHODS

- The ASSEMBLE project is an initiative to combine multi-national real-world cohort datasets and analyze the effectiveness and safety of SC IFX therapy. In the ASSEMBLE-1 analysis, three studies from France and the United Kingdom [1-3] were integrated to assess the clinical outcomes up to 6 months (6M) after switching from IV to SC IFX. Clinical remission was defined as Harvey-Bradshaw Index (HBI) or modified HBI (mHBI) <5 for Crohn's disease (CD) and Simple Clinical Colitis Activity Index (SCCAI) or partial Mayo score (PMS) <3 for ulcerative colitis (UC). Treatment persistence was assessed by Kaplan-Meier survival analysis.

RESULTS

Baseline characteristics

- The data of 428 patients were pooled from the three datasets (Table 1).
- 85.4% of patients were in clinical remission before switching from IV to SC IFX.

Table 1. Baseline characteristics

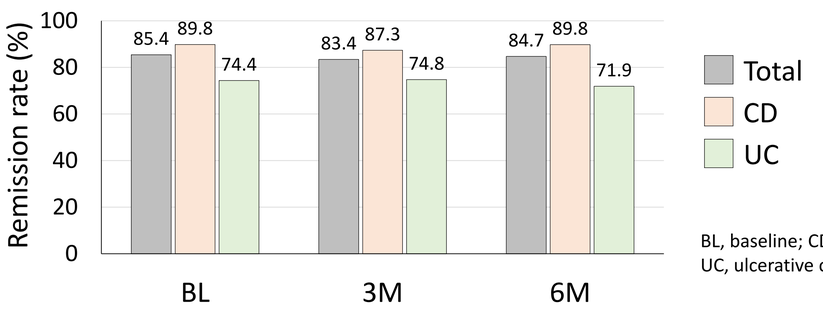
Characteristic	Overall (N=428)
Disease, n (%)	
Crohn's disease	302 (70.6%)
Ulcerative colitis	126 (29.4%)
Gender, female, n (%)	200 (46.7%)
Age, median (IQR)	38 (29,50)
HBI/mHBI, median (IQR)	1 (0,2)
SCCAI, median (IQR)	2 (1,3)
PMS, median (IQR)	0 (0,0)
FC, median (IQR), µg/g	46.0 (17.8,134)
CRP, median (IQR), mg/L	1 (1,4)
BMI, median (IQR), kg/m^2	25.4 (22.7,29.4)
Concomitant IMM	
No	197 (46.0%)
Yes	231 (54.0%)
Pre-switch IV IFX regimen	
Standard (5 mg/kg Q8W)	255 (59.6%)
Escalated	173 (40.4%)
CD Montreal location	
L1	70 (23.5%)
L2	85 (28.5%)
L3	142 (47.7%)
L4	1 (0.3%)
CD Montreal behavior	
B1	148 (49.8%)
B2	78 (26.3%)
B2/B3	9 (3.0%)
B3	62 (20.9%)
CD Montreal perianal	
No	213 (70.5%)
Yes	89 (29.5%)
UC Montreal extent	
E1	5 (4.1%)
E2	72 (59.0%)
E3	45 (36.9%)
SC IFX regimen	
120 mg Q2W	404 (94.4%)
120 mg QW	24(5.6%)

BMI, body mass index; CD, Crohn's disease; CRP, C-reactive protein; FC, fecal calprotectin; HBI, Harvey-Bradshaw Index; IFX, infliximab; IMM, immunomodulator; IQR, interquartile range; IV, intravenous; mHBI, modified Harvey-Bradshaw Index; PMS, partial Mayo score; QW, every week; Q2W, every two weeks; Q8W, every 8 weeks; SC, subcutaneous; SCCAI, Simple Clinical Colitis Activity Index.

Efficacy outcomes: Clinical remission

- The remission rates were well maintained up to 6M after switching (Fig 1).
- CD patients were associated with higher remission rate (89.8%) than UC patients (71.9%) at 6M (p<0.001; Fig 1).

Figure 1. Remission rates up to 6 months after switching

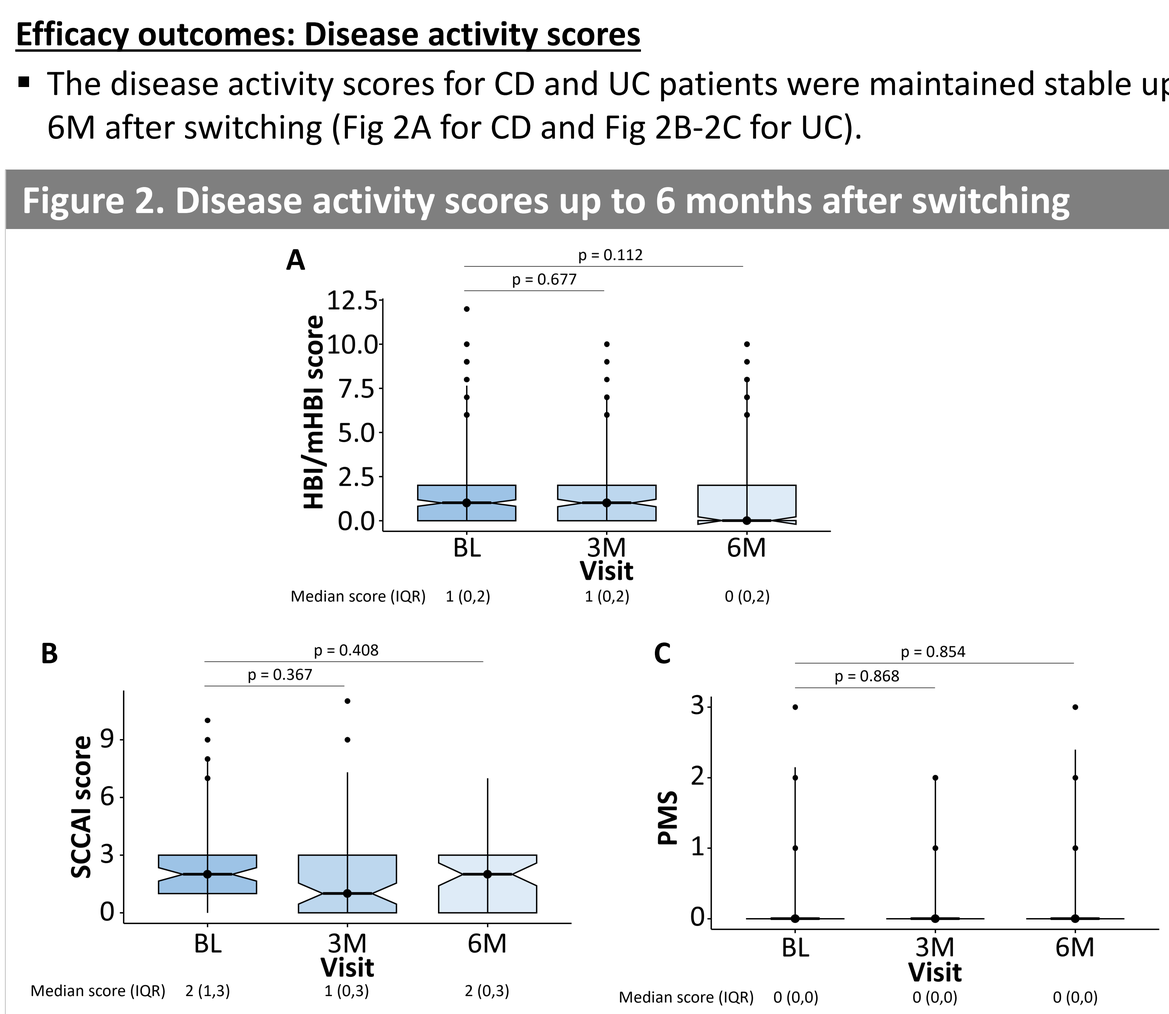


BL, baseline; CD, Crohn's disease; M, month; UC, ulcerative colitis.

Efficacy outcomes: Disease activity scores

- The disease activity scores for CD and UC patients were maintained stable up to 6M after switching (Fig 2A for CD and Fig 2B-2C for UC).

Figure 2. Disease activity scores up to 6 months after switching

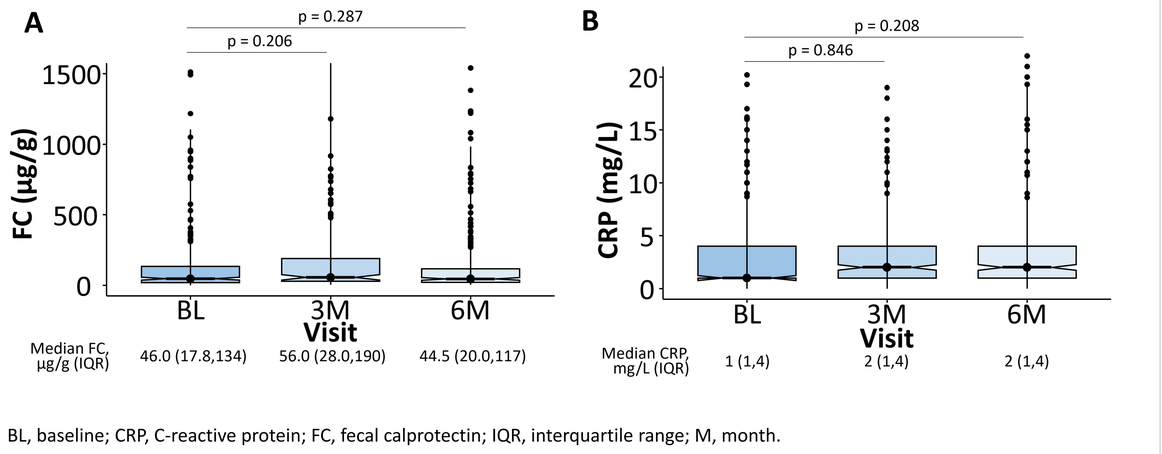


BL, baseline; HBI, Harvey-Bradshaw Index; IQR, interquartile range; M, month; mHBI, modified Harvey-Bradshaw Index; PMS, partial Mayo score; SCCAI, Simple Clinical Colitis Activity Index.

Pharmacodynamics: Biomarker levels

- The level of fecal calprotectin and C-reactive protein of the overall population were also maintained stable up to 6M after switching (Fig 3).

Figure 3. Biomarker levels up to 6 months after switching

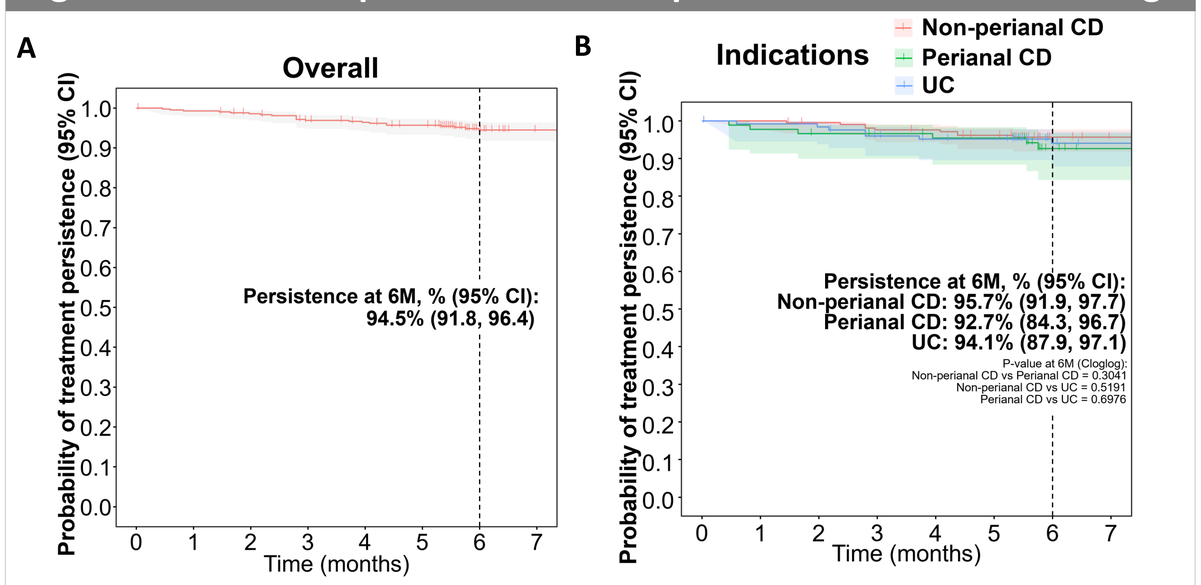


BL, baseline; CRP, C-reactive protein; FC, fecal calprotectin; IQR, interquartile range; M, month.

Treatment persistence

- High persistence was observed in the overall population and regardless of indication (Fig 4). Perianal CD patients (n=89) did not have a significantly worse treatment persistence rate than non-perianal CD patients (Fig 4B).

Figure 4. Treatment persistence rates up to 6 months after switching

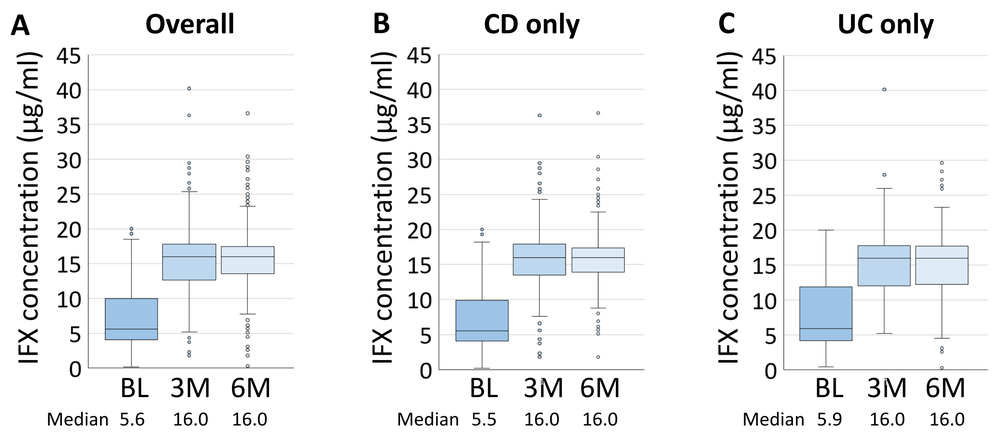


CD, Crohn's disease; CI, confidence interval; M, month; UC, ulcerative colitis.

Pharmacokinetics

- After switching, median IFX concentration was ~3-fold increased from baseline at 3M and well maintained up to 6M in both CD and UC patients (Fig 5).

Figure 5. Serum IFX levels up to 6 months after switching



BL, baseline; CD, Crohn's disease; IFX, infliximab; M, month; UC, ulcerative colitis.

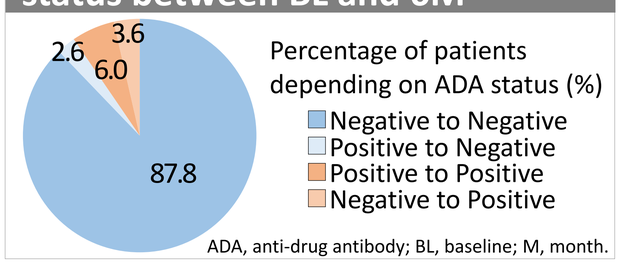
Safety outcomes

- The rate of drug discontinuation was low (5.8%) and the most common reasons for drug discontinuation were lost to follow-up, consent withdrawal, or worsening of disease activity (Table 2).
- Two patients discontinued due to injection-site pain.
- 87.8% of patients maintained ADA negativity up to 6M after switching and 2.6% of patients exhibited negative conversion of ADA status (ADA positive at baseline to ADA negative at 6M after switching; Fig 6).

Table 2. Most common reasons for drug discontinuation

Reasons	Number of cases
Lost to follow-up	3
Consent withdrawal	3
Worsening of disease activity	3
Worsening of perianal disease	3

Figure 6. Comparison of ADA status between BL and 6M



ADA, anti-drug antibody; BL, baseline; M, month.

CONCLUSIONS

- **This pooled analysis of ASSEMBLE-1 confirms that switching from IV to SC IFX is effective and safe for CD and UC patients in clinical practice and that the clinical remission is well maintained up to 6M after switching, with no new concerns in safety profiles.**

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References: **1.** Smith PJ, et al. J Crohns Colitis. 2022;16(9):1436-1446. **2.** Buisson A et al. Clin Gastroenterol Hepatol. 2023;21(9):2338-2346. **3.** Rahmany S, et al., Gastroenterology. 2023;164(Supplement 6):S-1121.