Anti-TNF agent drug survival in patients with IBD:
real world comparisons of individual anti-TNF agents based on the Swedish National Quality Registry for IBD (SWIBREG)

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Background

Studies comparing drug survival in different anti-tumour necrosis factor (TNF) agents in IBD patients are scarce, especially for second-line anti-TNF agents.

We aimed to:

A) assess drug survival and predictors of response and adverse drug reactions to first-line anti-TNF treatment and
B) examine drug survival for individual anti-TNF agents when used as second-line anti-TNF.

Methods

Well-characterised patients with IBD (n=955) starting their first anti-TNF treatment between 2006 and 2016 (table 1), were identified from the Swedish National Quality Registry for IBD (SWIBREG).

Drug survival was examined, stratified by reason for discontinuation, i.e. lack/loss of clinical effectiveness or adverse drug reactions. Multivariable Cox regression models were used to identify predictors of drug survival. Drug survival for the second anti-TNF was assessed by type of first anti-TNF agent.

Results

Risk factors at baseline for shorter drug survival, in patients with Crohn's disease, were use of infliximab as first-line anti-TNF (compared with adalimumab, adjusted HR = 1.95, 95% CI: 1.19–3.18) (figure 1A) and colonic disease (L2) (compared with ileal disease (L1) and ileocolonic disease (L3), adjusted HR = 2.16, 95% CI: 1.25–3.74).

Consistently, Crohn's disease patients who switched from adalimumab to infliximab had shorter drug survival, compared with those who switched from infliximab to adalimumab (figure 1B).

A normalisation of CRP level at three months was associated with decreased risk of short drug survival in both Crohn's disease (adjusted HR = 0.40, 95% CI: 0.19–0.81) and ulcerative colitis (adjusted HR = 0.40, 95% CI: 0.19–0.86). In Crohn's disease, but not in ulcerative colitis, immunomodulators were associated with a lower risk of short drug survival due to adverse drug reactions (adjusted HR = 0.50, 95% CI: 0.31–0.82). This association was partly explained by less risk of infusion reactions (adjusted HR=0.27, 95% CI: 0.08-0.89).

Fig. 1 A. Cumulative probability of remaining on the first anti-TNF agent

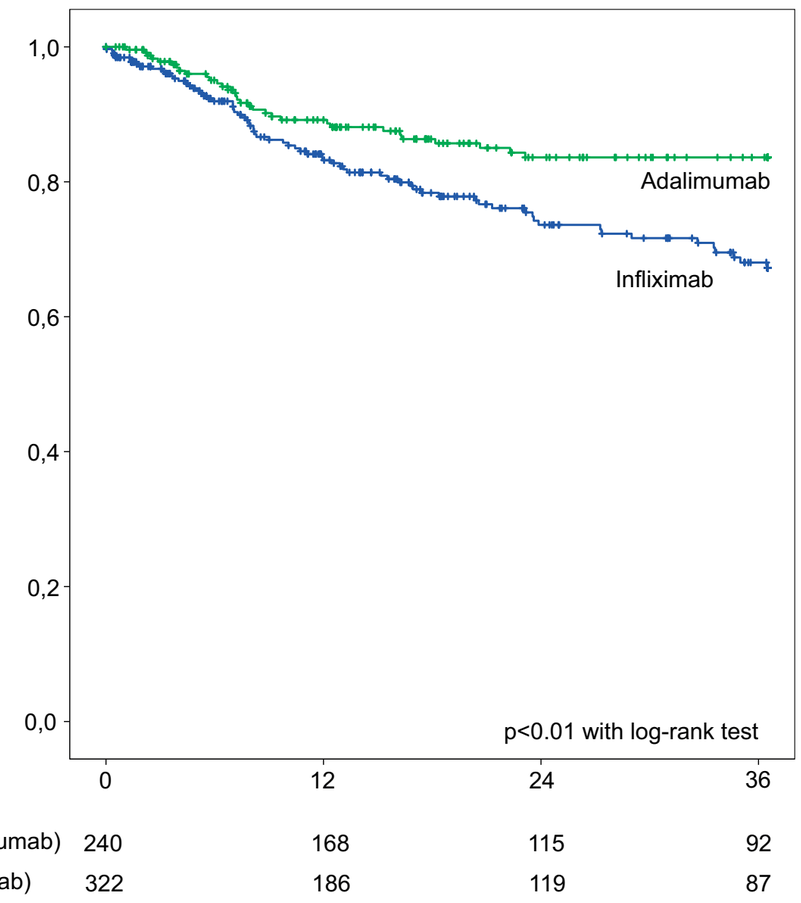

Fig. 1 B. Cumulative probability of remaining on the second anti-TNF agent

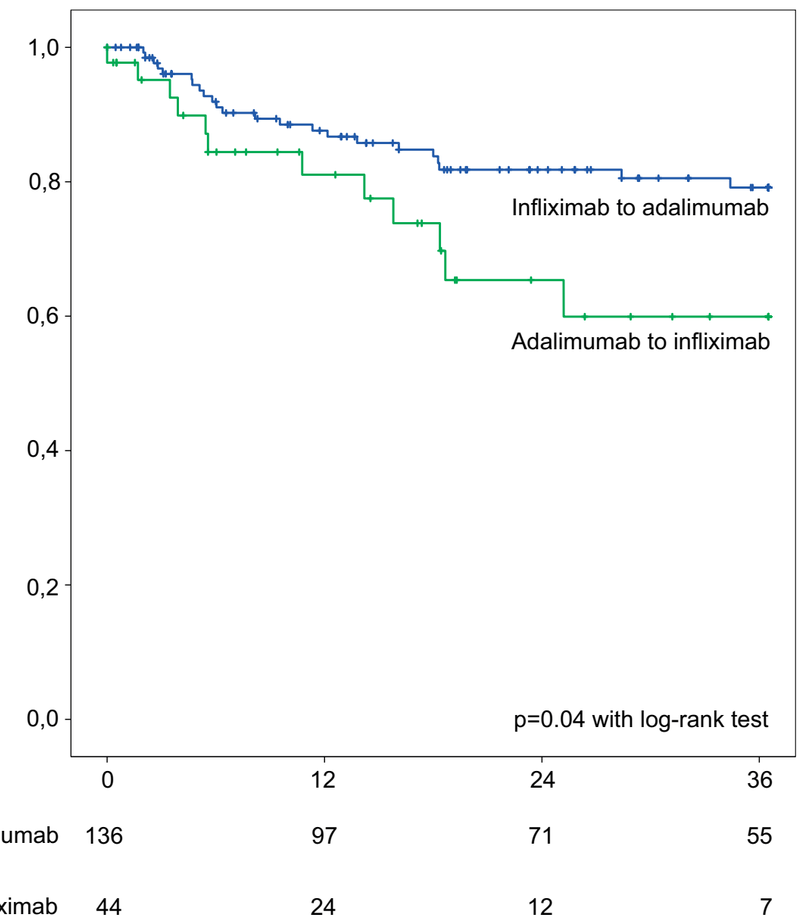

Table 1. Baseline clinical and demographical characteristics of the 955 IBD patients treated with anti-TNF

	Crohn's disease, n=570	Ulcerative colitis, n=385
Male sex, no. (%)	298 (52)	222 (58)
Median age at baseline (IQR)	35 (24-48)	33 (24-46)
Median disease duration in years (IQR)	6 (1-16)	4 (0-10)
L1 Ileal (+/- L4) CD, no. (%)	103 (18)	
L2 Colonic (+/- L4) CD, no. (%)	169 (30)	
L3 Ileocolonic (+/- L4) CD, no. (%)	289 (51)	
L4 Upper gastrointestinal tract, no. (%)	6 (1)	
Concomitant immunomodulators, no. (%)	278 (49)	176 (46)

Baseline data on age, year, CD behaviour, UC extent, previous IBD surgery, CRP concentration and smoking habits are not shown.

Conclusions

Drug survival duration was longer for adalimumab compared with infliximab both when used as first anti-TNF agent and when used as second line treatment. The consistent pattern indicates that these differences are not only explained by channelling bias (differential prescribing behaviour).

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