Cost Effectiveness of a Proactive Therapeutic Drug Monitoring Strategy in Patients with Inflammatory Bowel Disease Receiving Infliximab

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BACKGROUND

- Proactive therapeutic drug monitoring (TDM) is widely used in clinical practice, however, has not been demonstrated to improve anti-TNF therapy outcomes.
- We aimed to assess whether use of proactive-TDM is a cost-effective strategy in routine clinical practice.

METHOD

- Proactive TDM strategy was utilised with infliximab (IFX) levels and antibody-to-infliximab (ATI) levels, assessed at trough, in all inflammatory bowel disease (IBD) patients receiving therapy at our centre.

METHOD CONT

- Patients were grouped based on disease activity status.
- Trough IFX and ATI levels were documented for all patients.
- IFX dosing regimens following proactive TDM were documented and the net effect on IFX infusions number over the subsequent year extrapolated.
- Increase or decrease in drug-related costs on an annualised basis were then estimated.

RESULTS

- 108 patients were included.
- Median age was 36 years. 60% had Crohn's disease. 35% were receiving concomitant immunomodulators.
- 56% of patients were in remission at the time of TDM assessment.
- 44%, 30% and 26% of patients had IFX levels < 3 µg / mL, 3 – 7 µg / mL and > 7 µg / mL respectively.
- IFX levels were significantly lower in patients with active disease compared with those in remission (p=0.008).
- Cost-effectiveness analysis focused on patients in remission (n=59). The overall annual effect of proactive TDM is summarised in Table 1 and Graph 1.
- Overall proactive TDM resulted in a net projected reduction of 4.7 IFX infusions per annum.
- Utilising publicly available list prices for originator and biosimilar IFX and accounting for TDM assay cost, projected cost savings from proactive-TDM use were 9105.0 and 6840.7 Euro per annum respectively.

Impact of TDM on IFX Dosing (%)	
No treatment change	37%
IFX discontinued	11%
IFX interval shortened	36%
IFX interval lengthened	13%
IFX dose increase	2%
IFX dose decreases	1%

Table 1: Cost effectiveness of proactive TDM

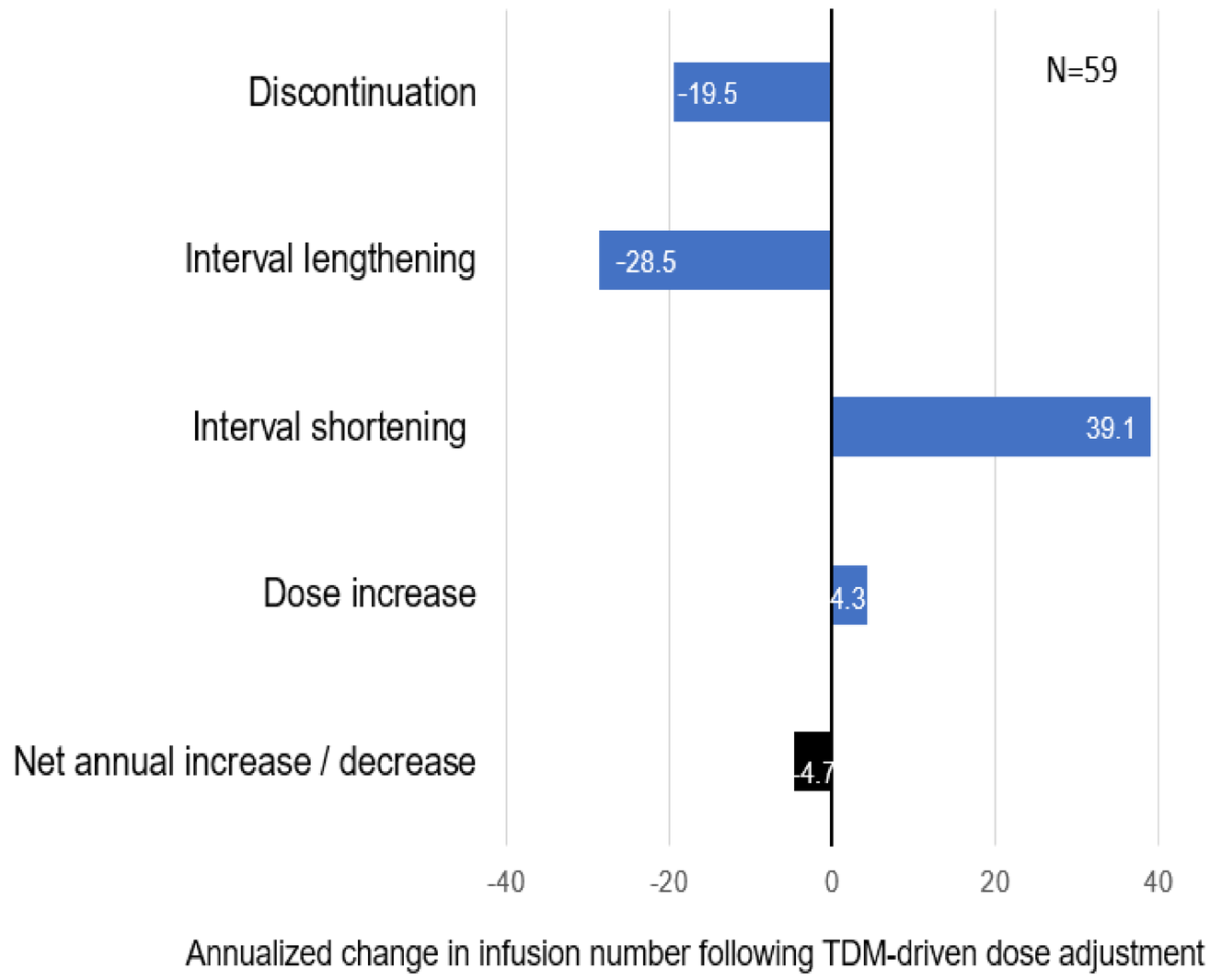

Figure 1: Cost effectiveness of proactive TDM

CONCLUSION

- Proactive TDM in IBD patients in remission resulted in a modest reduction in the projected annualised number of infusions in our unit with consequent minor drug-related cost savings.
- The frequency at which proactive TDM should be performed and whether subsequent rounds of proactive-TDM would continue to deliver similar cost savings is uncertain and requires further evaluation..