

# CLINICAL DECISION SUPPORT TOOL FOR VEDOLIZUMAB CAN PREDICT TREATMENT PERSISTENCE IN CROHN'S DISEASE BUT NOT IN ULCERATIVE COLITIS

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## Background:

Vedolizumab (VDZ) has displayed up to 82.9% treatment persistence as a first-line biologic for ulcerative colitis (UC) and ranked third in the second line. It ranked fourth in treatment persistence as the first or second-line biological therapy in Crohn's disease (CD) (1,2). Factors most commonly associated with treatment outcomes have been indicators of more aggressive disease, like refractoriness to corticosteroids and tumour necrosis factor (TNF) alpha inhibitors, elevated baseline patient-related outcomes (PROs), comorbidities in CD and faecal calprotectin (2,3). Pre-treatment prediction of response and long-term persistence could help optimise treatment in an individual patient.

## Methods:

We performed a retrospective single-centre cohort study based on the UR-CARE registry. Data for 129 patients treated with VDZ from July 2016 until April 2023 were analysed. A validated clinical decision support tool (CDST) for CD and UC was used to stratify patients according to the probability of response to VDZ (4,5). We used Kaplan-Meier survival curves to analyse treatment persistence at week 52, depending on the CDST group for CD and UC. The association between the CDST group and the optimisation of VDZ therapy was evaluated using the  $\chi^2$  test.

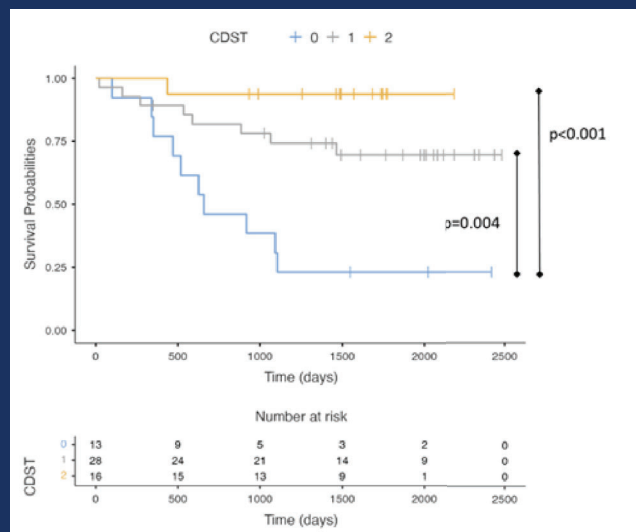


Figure 1: Treatment persistence in Crohn's disease

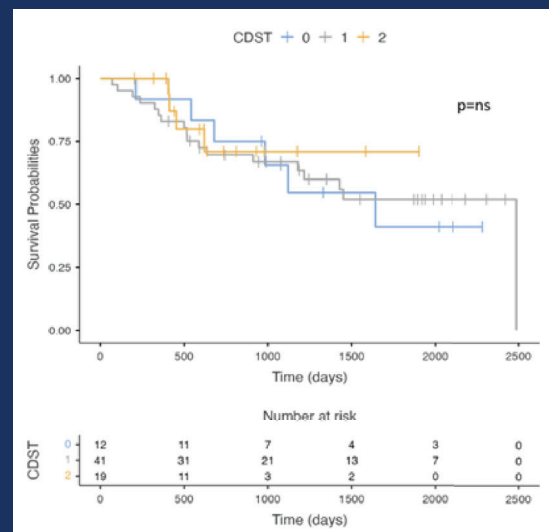


Figure 2: Treatment persistence in ulcerative colitis

## Results:

The study included 57 CD patients (median age 34 years, 38.6% male), and 72 UC patients (median age 32.1 years, 59.7% male). Patients with CD had longer disease duration (4.1 years) than UC patients (2.6 years). 33.3% of CD patients had ileo-colonic disease, 24.6% had upper GI involvement, 33.3% had fistulising disease, and 56.1% had prior surgery. 63.9% of patients with UC had pancolitis, and 34.7% had concomitant corticosteroids at baseline. Before VDZ, more than half of patients were exposed to TNF alpha inhibitors in both CD and UC (57.9% and 52.8%, respectively).

We found significantly higher **treatment persistence in CD** patients stratified into groups with intermediate (group 1) and high (group 2) probability of response, according to CDST compared to the group with low (group 0) probability of response. The VDZ therapy was discontinued in 76.9%, 28.6% and 6.3% of patients within CDST groups 0, 1, and 2, respectively. The association was statistically significant ( $p < 0.001$ ) (figure 1).

We could not confirm any significant difference in **treatment persistence in UC** between CDST groups. The VDZ therapy was discontinued in 50.0%, 34.9%, and 21.9% in groups 0, 1, and 2, respectively. While the trend between discontinuation of VDZ and CDST groups can be observed, the association was not statistically significant ( $p = 0.165$ ) (figure 2).

## Conclusions:

In our study, treatment persistence for VDZ could be predicted using CDST for CD, but not for UC.

### Literature:

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- Dulai PS, Boland BS, Singh S, Chaudrey K, Kolianni-Pace JL, Kochhar G, et al. Development and Validation of a Scoring System to Predict Outcomes of Vedolizumab Treatment in Patients with Crohn's Disease. *Gastroenterology.* 2018;155(3):687–95.