proportion of days covered (PDC) in the first year of treatment was calculated. Multivariable Cox and linear regressions assessed predictors associated with 5-ASA discontinuation and adherence, respectively.

**Results** We identified 694 AYA initiated on oral 5-ASA treatment. The median time to 5-ASA discontinuation was 176 days (95% CI 153-204). A quarter of AYA stopped after a month of treatment and by a year 2 out of 3 individuals had discontinued. The proportion with continuous use of 5-ASA in the first year of treatment varied by age at initiation (10-14 years: 49%, 15-17 years: 52%, 18-24 years: 32%; - Figure 1). The mean PDC was 73% (S.D. 0.31) in the first year of therapy and was lowest amongst individuals aged between 18 to 24 years, at 69% (S.D 0.32), compared to 81% (S.D 0.27) in 10 to 14 year olds and 79% amongst 15 to 17 year olds (S.D 0.30). Starting treatment between 18 and 24 years of age and socioeconomic deprivation increased the risk of discontinuation and lower adherence, while early corticosteroid use, a proxy marker of disease severity, was associated with a lower risk of discontinuation and better adherence.

**Conclusion** AYA diagnosed with UC and initiated on oral 5-ASA medication are at risk early discontinuation and poor adherence. Clinicians should be vigilant regarding the higher risk following the first month of treatment, particularly in young adults and those living in deprived postcodes. Targeted interventions are needed to improve 5-ASA adherence among these high risk groups.

**REFERENCE**

**Abstract HMO-3**

**MAPPING FIELD CANCERISATION AND CLONAL EVOLUTION IN IBD COLONS WITH DYSPLASIA AND CRC**

1-2Mehmet Yalchin*, 3Kit Curtius, 2Săpîie Nowinski, 2Morgan Moorghen, 2Chris Kimberley, 2Kane Smith, 2Ann-Marie Baker, 1,2Ibrahim Al-Bakir, 1Alisa Hart, 1Trevor Graham. 1St. Mark’s Hospital, London, UK; 2Centre for Genomics and Computational Biology, Barts Cancer Institute, Barts and the London School of Medicine and Dentistry, Queen Mary University of London, London, UK; 3Division of Biomedical Informatics, Department of Medicine, University of California San Diego, San Diego, USA

**HMO-4**

**IMMUNOGENICITY TO SECOND ANTI-TNF THERAPY (IMSAT): IMPLICATIONS FOR SEQUENCING OF BIOLOGIC THERAPY**

Neil Chandhli*, Simeng Lin, Amanda Thomas, Ben Hamilton, Rachel Nicer, Desmond Chee, Nick Kennedy, James Goodhand, Tariq Ahmad. Royal Devon and Exeter NHS Foundation Trust, Exeter, UK

**Introduction** Anti-TNF treatment failure in patients with IBD is common. International guidelines recommend switching out of class when anti-TNF drug levels are therapeutic and within class with an immunomodulator when anti-TNF drug levels are suboptimal and associated with antibody development.
We sought to define the: 1) risk of immunogenicity to a second anti-TNF stratified by immunogenicity to first anti-TNF, 2) rates of drug persistence following failure to first anti-TNF drug and 3) strategies to mitigate development of immunogenicity.

Methods We performed a retrospective cohort study across 38 UK hospitals. 1058 patients [532 (51%) male, 755 (71%) Crohn’s disease] had both infliximab and adalimumab therapeutic drug monitoring performed by our service from May 2013 to October 2020 were identified. Drug and antibody levels were measured using the IDKmonitor® drug-tolerant ELISA assays. Treatment failure included primary nonresponse, secondary loss of response, adverse drug reactions and IBD-related surgery, and patients were identified by case note review. Immunogenic failure was defined as treatment failure with suboptimal drug levels (infliximab level <2 mg/L, adalimumab level <6 mg/L) with an antibody concentration ≥10 AU/ml. Pharmacodynamic (PD) failure was defined as treatment failure despite adequate drug levels.

Results Patients who developed immunogenicity to adalimumab (first) were more likely to develop immunogenicity to infliximab (second) (64% vs 40%, p < 0.001), and patients who developed immunogenicity to infliximab (first) were more likely to develop immunogenicity to adalimumab (second) (34% vs 20%, p = 0.002). Patients who developed: antibodies and undetectable drug, low drug levels, or low drug levels with immunogenicity to infliximab (first), were more likely to develop these outcomes to adalimumab (second) (all p<0.001).

There was no difference in drug persistence to second anti-TNF in patients with pharmacodynamic and immunogenic treatment failure to first anti-TNF (p = 0.86). In patients with immunogenic (but not pharmacodynamic) failure, commencing an immunomodulator at the time of switching to second anti-TNF drug was associated with longer drug persistence than in patients treated with an immunomodulator throughout or not all (Figure 1).

Conclusions Immunogenicity to the first anti-TNF was associated with immunogenicity to the second anti-TNF, irrespective of drug sequence. Commencing an immunomodulator at the time of switching to second anti-TNF was associated with improved drug persistence in immunogenic, but not pharmacodynamic, failure. However, 50% of patients remained on second anti-TNF at 5 years in both groups, suggesting switching in-class may be appropriate, irrespective of the cause of treatment failure to first anti-TNF.

Abstract HMO-4 Figure 1 Drug persistence to second anti-TNF in patients stratified by immunomodulator use

Abstract HMO-5 Figure 1 Antibody formation in infliximab treated patients

Abstract HMO-5 Figure 2 Infliximab persistence

HMO-5 ASSOCIATION OF ANTI-INFliximab ANTIBODIES AND HLA-DQA1*05 VARIANT IN ULCERATIVE COLITIS: A RETROSPECTIVE SINGLE CENTRE STUDY

Haidee Gonzalez*, Sankaranarayanan Ramachandran, Alison Pattinson, Jack Turnbull, Katie Stamp, Emma Whitehead, Alison Talbot, Sally Myers, Shaji Sebastian. Hull University Teaching Hospitals NHS Trust, Hull, UK

Introduction The genetic variation HLA-DQA1*05 has been reported to be associated with anti-Infliximab antibody in CD. The relevance in UC patients receiving infliximab is uncertain.

Aim To evaluate the association of HLA-DQA1*05 and infliximab antibody formation, treatment changes and infliximab persistence in a real world setting of single centre cohort

Methods Infliximab treated UC patients (n=94) were retrospectively screened for HLA-DQA1*05. The risk of anti-infliximab antibody formation, absent drug levels in presence of antibody, change in therapy from infliximab were assessed in variant carrying patients in comparison to those without the variants. The proportion of patients needing dose optimisation of infliximab also evaluated.

Results Anti-infliximab antibodies were detected in 41.5% of patients in a median follow up of 14.75 (IQR 9-29) months. HLA-DQA1*05 was positive in 39.13% of patients. 52.2% of patients were on concomitant immunomodulators. Higher proportion of patients with HLA-DQA1*05 developed anti-Infliximab antibodies (59% Vs 24%, p=0.002). Eighty percent of patients who had anti Infliximab antibodies with...