Proactive TDM has the potential to improve the quality of care among IBD patients in a cost effective way, therefore, determining ways to reduce cost and improve turnaround time of the assays will be essential in making this important test more commonplace. *equal contribution for the first two authors

Sa1911

TROUGH LEVELS AT INDUCTION: IMPACT ON LONG TERM RESPONSE WHEN RE-INITIATING INFLIXIMAB

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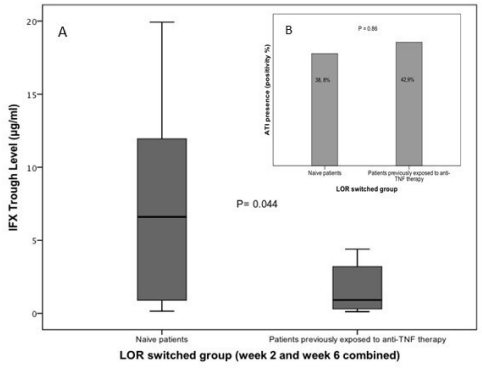
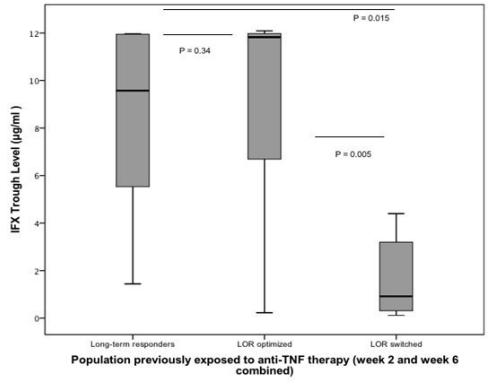
Infliximab (IFX) is indicated for the treatment of inflammatory bowel disease (IBD) (ulcerative colitis(UC) or Crohn disease(CD)). Nevertheless, a significant proportion of patients will experience a loss of response (LOR) to IFX over time which may require despite optimization a switch to another anti-TNF or to swap out to another biotherapy. We have recently reported that week 2 and 6 IFX through levels (TLs) can be predictive of treatment failure and long term response. Only one study has shown that week 14 TLs can be predictive of long term response on re-initiation of IFX therapy. Our objective is to evaluate early on at induction IFX TLs and antibodies to IFX (ATI) in patients previously exposed to anti-TNF. 269 IBD patients (194 CD-75 UC) have been treated with IFX on follow-up. 2331 samples were prospectively collected but measured retrospectively by ELISA in parallel with clinical data. 91 samples (TL measured <1µg/ml) were analyzed for IFX ATI using drug-sensitive bridging ELISA. At follow-up, patients were subdivided into three groups: long-term responders, patients who had LOR but responded to optimization or patients who had LOR but did not respond to optimization and were switched to another biotherapy. Each group was subdivided according to naïve or previous treatment with anti-TNF (IFX or Adalimumab) status. During induction (week 2 and 6 combined), in the ***LOR switched group***, median IFX TL was significantly lower in previously exposed patients than in naïve patients (0.92µg/ml[0.12-4.4µg/ml]VS6.6µg/ml[0.15-19.93µg/ml], p=0.044)**(Figure 1A)**. Inversely, there was no statistical difference between median TL in the ***LOR optimized group*** between naïve and previously exposed patients(9.38µg/ml[0.17-14.91µg/ml]vs11.82µg/ml[0.17-14.91µg/ml], p=0.52) as well as in naïve and previously exposed ***Long-term responders***(9.57µg/ml[1.44-11.97µg/ml] vs 11.91µg/ml[0.12-19.93µg/ml], p=0.92). Overall, among the previously exposed patients, the ***LOR switched group*** had a lower median IFX TL (0.92µg/ml[0.12-4.40µg/ml]) compared to the ***Long-term responders***(9.57µg/ml[0.44-11.97µg/ml], p=0.015) and ***LOR optimized group***(11,82µg/ml[0.23-12.09µg/ml], p=0.005)**(Figure 2).** The percentage of ATI occurrence was statistically lower in the ***Long-term responders***(5.7%) than in the ***LOR optimized***(37.5%), p= 0.002 and ***LOR switched groups***(40%), p=0.002. Interestingly, among **the *LOR switched group***, the percentage of ATI occurrence was similar in patients whether naïve or previously exposed to anti-TNF (38,8%VS42,9%, p= 0.86)**(Figure 1B)**. The same observation was found in the ***LOR optimized group***(25%VS45% p=0.45). In ***LOR switched group***, patients previously exposed to anti-TNF seem to have lower IFX TLs at induction (at week 2 and 6) than naïve patients. This may not be related to immunogenicity as the presence of ATI was similar in patients whether naïve or previously exposed to anti-TNF.





Sa1912

RAPID POINT-OF-CARE MONITORING OF ANTI-INFLIXIMAB ANTIBODIES IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE TREATED WITH THE REFERENCE INFLIXIMAB OR CT-P13 IN ROUTINE CLINICAL PRACTICE

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Background: Loss of clinical response and infusion reactions to infliximab are associated to Anti-IFX antibodies (ATI). ATI detection is a key step of patient management algorithm. However, current techniques require additional patient appointments for sample collection, processing and batching in centralised facilities. Test reporting usually takes several days or weeks impairing effective decision making. Here we validate the use of capillary blood in a real-life full point-of-care (POC) setting where patients attend the infusion centre for Remicade® (RMC) or CT-P13 infusions. **Methods:** PQ-EF2 is a prospective, observational study designed to evaluate the performance of a rapid POC test (Promonitor® Quick Anti-IFX, Progenika, Spain) to detect ATI in routine clinical practice in IBD and rheumatic patients treated with RMC or Inflectra® attending the infusion centre with the reference ELISA. The POC test is a qualitative immunochromatographic assay based on lateral flow technology to detect ATI (including the biosimilar CT-P13) in either fingerprick or serum. Consecutive patients (initiating or under maintenance IFX therapy) were recruited and tested with the POC rapid test in venous and capillary whole blood specimens immediately before the infusion (trough). ATI test results were read visually with the POC test in 30 min, just before the patient started the infusion. Trough sera were also collected for subsequent analysis with the rapid test and benchmarked with Promonitor® Anti-IFX ELISA. Follow-up time was 6 months. ELISA quantitative results were categorized as positive and negative to allow comparisons with the qualitative rapid test. **Results:** Fifty four consecutive patients (21 IBD (13 Crohn's disease, 8 ulcerative colitis), and 33 with rheumatic diseases) were recruited (a total of 101 visits in the 6 months follow-up) accounting for a total of 101 sera, 101 fingerpricks and 35 venous whole blood samples. Overall, 4 (7.4%) patients developed ATI (1 CD, 1 UC, 2 ankylosing spondylitis). ATI were detected in 3 patients treated with RMC and 1 treated with Inflectra®. Overall agreements between fingerprick vs venous whole blood and fingerprick vs serum measured with the rapid POC test were 100% and 98%, respectively. Positive (PPA) and negative (NPA) agreements between the POC test and ELISA were 86% and 99%, respectively. PPA and NPA between the ELISA and the POC test in serum was 100% and 99%, respectively. **Conclusion:** ATI can be reliably detected in either venous or capillary circulation. Results show an almost perfect agreement between specimens and with the reference ELISA technique. ATI measurement with the POC test allows the physician to detect ATI in a quick and fully decentralized mode facilitating immediate POC decision making to aid patient management and increase safety.

Sa1913

THIOPURINES TREATMENT IN CHILDREN WITH INFLAMMATORY BOWEL DISEASE: A SURVIVAL ANALYSIS OF THE LONG TERM EFFICACY

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Background: Azathioprine and Purinethol are two treatments for prevention of relapses in inflammatory bowel diseases (IBD). Their real efficacy in Pediatric Crohn's Disease (CD) or Ulcerative colitis (UC) is still under debate. Although the acceptance rate is high, the probability to pursue the treatment on the long run seems low (due to either inefficacy or adverse effects). **Objectives**: The primary objective was to assess the proportion of children with treatment failure with time. Secondary objectives were: 1) to evaluate the proportion of patients presenting TPMT deficiency at diagnosis and 2) to investigate the factors that could predict the long-term response rate of thiopurines as prevention of relapses treatment. **Methods**: We identified all children exposed to thiopurines within the first year of IBD diagnosis in our IBD database. Data on diagnosis, disease location, and time of initiation of thiopurines, dose, reason of cessation were extracted from the database. We used cox proportional hazard model to investigate the association between clinical and biological variables on the probability of thiopurine cessation. The analyses were performed with SAS 9.4. **Results**: During the study period, 189 patients (51.9% female) were treated with thiopurines (Azathioprine=152 (80.4%), Purinethol=37 (19.6%)). The median (IQR) duration between diagnosis and start of thiopurines was 42 days (91). Before initiating thiopurines, Thiopurine Methyl Transferase (TPMT) activity was assessed in 184 children; among them, only four had a level lower than 25 nmol/gHb/h. Thus, most patients started the treatment with a median dose of 1.8 for Azathioprine. Treatment cessation occurred in 116 children (61.4%) either because of relapses (treatment failure: n= 92 (48.6%)) or because of adverse events such as allergies (N= 13 (7%) or pancreatitis (n=9 (4.7%)). Therefore, the median duration of thiopurines as maintenance therapy was 21.7 months. None of the following variables were associated with the probability of treatment cessation: sex, age at diagnosis, disease type and early thiopurines initiation. Colonic CD was associated with a higher duration of treatment: 29.1 months as compared to isolated ileal CD (26.6 months) or ileo-colonic CD (20.6 months) but this difference was not statistically significant (log rank p= 0.14, figure 1). **Conclusion**: Despite the promising results of the first randomized trial by Markovitch et al in 2000, the real life and long term benefits of thiopurines are debated. In our study, we found that less than 50 % of children were able to maintain treatment after two years of follow-up. Most of the reasons for treatment cessation were failure to maintain remission or adverse events (drug Intolerance, or pancreatitis).