are reported on comitant presence of ATI and IFX mainly because commercially available ELISA are unable to detect ATI in the presence of IFX, moreover, the clinical impact of this coexistence is completely unknown as prospective studies investigating this issue are lacking.

**Aim:** To assess prospectively the evolution of anti-IFX response over time and to investigate the clinical significance of coexistence of ATI and IFX in IBD patients on IFX therapy.

**Methods:** We evaluated 80 sera from 15 IBD patients (8 CD and 7 UC) on scheduled IFX treatment between September 2012 and November 2013. Blood was drawn immediately before each infusion, after the induction phase, to assess TL of IFX and ATI by a new ELISA test (Immunodagnostik AG, Bensheim, Germany) able to measure free and bound antibodies against IFX. ATI was defined on the basis of international accepted criteria.

**Results:** ATI was observed in 5/15 (33%) patients (3 UC, 2 CD). Positive ATI (>10 UA/ml) values were inversely correlated with TL (r = –0.364, p = 0.0009). Sixty percent of patients developed ATI in the presence of IFX, moreover, the clinical impact of this coexistence is completely unknown as prospective studies because commercially available ELISA are unable to detect ATI in the presence of IFX. Positive ATI (1.44 mcg/ml) was predictive of ATI development in 90% of patients after IFX dose adjustment. We also observed that a TL below 3 mcg/ml was predictive of ATI development in 90% of patients (5 UC, 4 CD); furthermore, most patients (7 out of 9) developed ATI within the first 6 months from the induction phase.

**Conclusions:** In our prospective study the use of a new ELISA test, allowing to measure free and bound antibodies, confirmed the inverse correlation between ATI and IFX TL. Identification of ATI when the drug is still detectable could be helpful to select those patients at higher risk to develop LOR who mostly benefit from an early adjustment of IFX treatment.

**P555**

A prospective, controlled, single center pilot study comparing the efficacy of infliximab maintenance therapy (5 mg/kg) every 8 vs. 10 weeks based on successive measurements of fecal calprotectin

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**Background:** The STORI trial has documented that patients with Crohn’s disease (CD) in deep remission can stop treatment with infliximab (IFX) without risking future loss of response (LoR) to IFX. It has also been shown that mucosal healing (MH) is associated with normal levels of fecal calprotectin (FC) in IBD patients. Aim: Based on successive measurements of FC to assess whether increasing the dose interval of IFX from 8 to 10 weeks in CD patients in complete deep remission (CDR) increases the risk of loss of Remission (LoR) to IFX.

**Methods:** This was a single-center, pilot, prospective, controlled, open-label study. Sixteen CD patients [6F:10M, aged 25 (range 18–48) years, 12 patients with phenotype A2L1/L3B1 and 4 with A2L2B1] in remission for at least 3 years agreed to receive IFX 5 mg/kg q10 weeks (group S – study group). Complete Deep Remission at baseline was assessed by the combination of a Harvey–Bradshaw Index (HBI) <4, normal serum C-reacting protein (CRP) levels, MH (at ileocolonoscopy performed up to 3 months before study entry) and FC levels <100 µg/g of fecal tissue (FT) (quantitative method, Quantum Blue, Bühmann, Switzerland). A group of 15 CD patients also in CDR matched for age, smoking habits, CD phenotype, and duration of IFX treatment who continued on 5 mg/kg IFX q8 weeks served as controls (group C – control group). Patients and controls were followed for 2 years clinically (HBI) and by serum CRP measurements every 10 and 8 weeks, respectively, and FC measurements before every other IFX infusion if FC values exceeded 200 µg/g FT patients were followed closely by repeated FC measurements and if serum CRP levels rose above normal range with or without clinical recurrence patients were endoscoped to assess recurrence of CD.

**Results:** FC levels at baseline were 52.8 (+30–89) µg/gFT in group S and 49.6 (+30–92) µg/gFT in group C. At 1 year follow up, 15/16 patients in group S remain in CDR as indicated by a HBI <4, serum CRP <0.5 mg/dl) and FC 78 (+30–129) µg/gFT. One A2L2B1 patient relapsed (HBI = 9, CRP = 4 mg/dl) at 7 months, 3 months after FC rose steadily from <30 to >300 µg/gFT. 10/15 of group S patients underwent endoscopy at 1 year and remain in complete MH. In group C, 14/15 patients remain in CDR with normal FC values and only one patient withdrew for LoR to IFX at 7 months. The dose of IFX remains unchanged in patients of both groups.

**Conclusions:** CD patients in complete deep remission can receive IFX q10 weeks without risking losing response if FC levels are maintained in the normal range. This trial continues to complete a follow up period of two years.
therapy. In situations where biological treatment is uncertain or inappropriate, physicians should consider other options instead of prescribing anti-TNFalpha agents.

**P557** Antibody and cell-mediated immune response to whole virion and split virion influenza vaccine in patients with inflammatory bowel disease on maintenance immunosuppressive and biological therapy

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**Background:** Influenza vaccination is recommended for inflammatory bowel disease (IBD) patients on immunosuppressive therapy. The objectives of this study were to evaluate and compare the antibody and cell-mediated immune response to the split and whole virion influenza vaccine in patients with IBD treated with anti-TNF-alpha and immunosuppressive therapy.

**Methods:** 156 immunocompromised IBD patients were vaccinated with whole virion vaccine and 53 patients (control group) refused vaccination. Split virion vaccine and whole virion vaccine were used. Serum samples were obtained for pre- and postimmunisation antibody titers to influenza vaccine (A/California/7/2009 (H1N1), A/Victoria/361/2011 (H3N2), B/Wisconsin/1/2010-like B/Hubei-Wujiaogang/158/2009). Cell-mediated responses were evaluated using an interferon (INF)-gamma, interleukin (IL)-2, and tumor necrosis factor (TNF)-alpha ELISA.

**Results:** Postimmunisation titers of both influenza subtypes increased significantly after the administration of split virion vaccines compared to the controls and to those who received whole virion vaccine. The antibody titers of Influenza B also increased significantly in patients immunized with split vaccine and treated with anti-TNF-alpha therapy. After influenza vaccination the level of serum IL-2 significantly decreased. No serious side-effect developed after influenza vaccination, influenza-like symptoms did not differ significantly between vaccinated vs. control patients. The relapse of the disease was observed in only 10% of the patients that was more common in vaccinated vs. control subjects.

**Conclusions:** Antibodies are more effective than whole virion vaccines. Measuring the antibody responses is worth in patients treated with immunosuppressants to determine the efficacy of influenza vaccination.

**P558** Antibodies against infliximab are associated with increased risk of anti-adalimumab antibody development in patients with inflammatory bowel disease

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**Background:** Infliximab (IFX) is effective for treatment of inflammatory bowel disease (IBD), but a notable proportion of patients relapse despite dose-optimization. In these patients, it is recommended to change to a second TNF-inhibitor such as adalimumab (ADL). However, there is considerable variation in the response to ADL after switching, and factors influencing outcomes are largely unknown. As development of anti-IFX antibodies (Abs) is a potential cause for IFX failure, we investigated if patients with anti-IFX Abs are prone to develop antibodies to ADL after switching therapy.

**Methods:** Observational, retrospective, single-center cohort study of all IBD patients treated with IFX or ADL (n = 482). Anti-IFX Abs, including cross-reactivity with ADL, anti-ADL Abs, and drug concentrations in serum were measured by clinically validated radioimmunoassay.

**Results:** Anti-IFX Abs were assessed in 189 patients (n = 131 Crohn’s disease; n = 58 ulcerative colitis) treated with IFX as first line anti-TNF agent. Approximately half the patients (49%) were tested anti-IFX Ab positive (median 59 U/ml, IQR 26–97). Anti-IFX Abs appeared to be functional as they reduced the IFX serum levels of anti-IFX Ab positive patients: median 0.0 µg/ml, IQR 0–0 vs. 1.8 µg/ml, IQR 0.9–4.6 in anti-IFX Ab negative patients, p = 0.002. Anti-IFX Abs did not cross-react with ADL (n = 41 assessed). The treatment was changed to ADL in 66 patients with anti-IFX Abs and in 25 patients without anti-IFX Abs. Patients with previous anti-IFX Ab development were significantly more prone to develop anti-ADL Abs (10/29 patients: 34%) than those without previous anti-ADL Ab development (0/12 patients: 0%); OR estimated 13, p = 0.02. Detected anti-ADL Abs correlated with reduced blood levels of ADL in all cases: median 0.0 µg/ml, IQR 0–0 vs. 9.2 µg/ml, IQR 6.2–11.6 in anti-ADL Ab negative patients, p = 0.017.

**Conclusions:** Antibodies against IFX are highly drug specific and do not cross-react with ADL, thus making switching from IFX to ADL safe even in the presence of anti-IFX Abs. However, compared to patients without anti-IFX Abs, patients who develop anti-IFX Abs during previous IFX therapy have a higher risk of developing specific and functional anti-ADL Abs.

**P559** Anti-tumour necrosis factor therapy improves initial resection rates in Crohn’s disease

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**Background:** Anti-tumour necrosis factor (anti-TNF-α) therapy is useful in refractory Crohn’s disease, but it remains unclear whether this therapy reduces the rate of intestinal resection. We evaluated resection rates after the administration of anti-TNF-α for Crohn’s disease.

**Methods:** The study population consisted of 193 patients with Crohn’s disease who were treated at our institution for more than 5 years. We retrospectively analyzed patient characteristics, cumulative resection rates during the study period, risk factors involved in surgery, and cumulative resection rates with or without anti-TNF-α agents.

**Results:** (1) In this cohort the male-to-female ratio was 124:69, average age of onset was 23.8 years (range, 17 to 72 years), and disease duration was 16.3±7.7 years. In terms of Crohn’s type, 23.3% of patients had ileitis, 9.0% had colitis, and 67.6% had ileocolitis. Patients received anti-TNF-α drugs or immunomodulators in 38.6% or 38.5% of cases, respectively. Anti-TNF-α therapy was prescribed more frequently in the late-onset group (Crohn’s developed after 2002) than the early-onset group (developed before 2001). (2) The cumulative resection rate in the early-onset group was 29.2% and that in the late-onset group was 20.8%. The resection...