administered intraperitoneally once chronic colitis had established (from day 35 post-infection, p.i.). Systemic, mesenteric lymph node (MLN) and colonic effects were analysed at day 45 p.i. MLN cell cytokine bead-array and colonic gene expression (RT-qPCR) analysis were performed. Colonic histopathology, tissue $Foxp3^+$ and macrophage recruitment were determined. Treated groups were compared to naïve and untreated-infected AKR (n=5 per group).

**Results** Neither treatment altered worm expulsion. Anti−TNFα Ab and corticosteroid therapy preserved colonic length, compared to untreated disease. Colonic inflammation was less severe with steroid treatment (p=0.005) and infliximab (p=0.07). An increase in MLN TH2 cytokines was suggested with both treatments. Reduced colonic TNFα, IL-1β, IFNγ and IL-12p40, and increased IL-13 expression were observed following Infliximab. Down-regulated TH1 cytokines, elevated TH2 cytokines (IL-4, IL-5, IL-13), and up-regulated colonic IL-10 expression were detected following corticosteroid treatment. Colonic $Foxp3^+$ cell numbers increased with disease but were unaltered by either treatment. A significant reduction in tissue $F4/80^+$ macrophages was observed with infliximab treatment alone.

**Conclusion** Anti−TNFα Ab and corticosteroid therapy suppress TH1-driven experimental colitis. Up-regulated transcription of TH2 and regulatory (IL-10, TGFb, Foxp3) pathway molecules was seen with corticosteroid treatment. This was not accompanied by an increased influx of $Foxp3^+$ T-cell, suggestive that corticosteroids may alter regulatory-cell function more significantly than recruitment, in the reduction of pathology and disease activity. Anti−TNFα Ab treatment reduced colonic pro-inflammatory macrophage recruitment. With differing modalities of immunosuppression demonstrated, this model may increase understanding of why either mode of therapy can induce benefit in man even if the other has failed.

**Competing interests** None declared.

## PWE-246 INFLIXIMAB TREATMENT SIGNIFICANTLY REDUCES INFLAMMATORY MACROPHAGE NUMBERS WHILE PRESERVING REGULATORY MACROPHAGES IN A MOUSE MODEL OF CHRONIC CROHN'S COLITIS

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**Introduction** Inappropriate inflammatory responses to intestinal flora, augmented by host susceptibility genetics, contribute to the pathogenesis of Crohn's disease (CD). Transmural intestinal inflammation results from innate and adaptive immune cell infiltration, and pro-inflammatory cytokine accumulation. Activated macrophages represent a major source of TNFα production. The treatment of CD with anti-TNFα antibody (Ab) therapy has proved clinically beneficial, yet over 30% of patients fail to respond. We characterised the biological and immunological effects of Infliximab therapy in a model of experimental colitis.

**Methods** Genetically identical mice (AKR), susceptible to chronic *Trichuris muris*-induced colitis, were infected with 300 *T muris* eggs. A single 5 mg/kg dose of Infliximab was administered intra-peritoneally once chronic colitis had established (from day 35 post-infection, p.i.). Systemic, mesenteric lymph node (MLN) and colonic effects were analysed at day 45 p.i. MLN cell cytokine bead-array and colonic gene expression (RT-qPCR) analysis were performed. Colonic histopathology, tissue $Foxp3^+$, and macrophage recruitment and phenotype were determined. The treatment group was compared to untreated-infected, naive, and naïve AKR administered Infliximab (n=5 per group).

**Results** Treatment did not alter worm expulsion. Anti−TNFα Ab therapy preserved colonic length compared to untreated disease (p=0.049). Colonic inflammation was less severe with Infliximab treatment (p=0.07). Reduced TNFα, CCL2, and GMCSF proteins were measured in the MLN of Infliximab treated infected AKR. Reduced colonic expression of TNFα, IL-1β, IFNγ and IL-12p40, and increased IL-13 was observed following Infliximab treated disease. Colonic $Foxp3^+$ cell numbers increased with disease but were unaltered by treatment. Infected mice treated with Infliximab demonstrated a 50% reduction in colonic $F4/80^+$ macrophages (p=0.036). A relative increase of the proportion of colonic $Arg^+$ alternatively activated macrophages (AAMΦ) was observed with Infliximab treatment compared to untreated disease (29% vs 14%).

**Conclusion** Infliximab therapy suppresses TH1-driven experimental colitis. Anti−TNFα Ab treatment reduced pro-inflammatory macrophages recruitment, and for the first time in vivo has been shown to preserve colonic tissue regulatory AAMΦ. Whether a result of a fundamental alteration to macrophage recruitment, or the differentiation of a specific macrophage phenotype, requires further study. The presence of AAMΦ at index biopsy, or an increase in AAMΦ numbers following treatment initiation, may help to identify patient responders to Anti-TNFα Ab therapy.

**Competing interests** None declared.

## PWE-247 ARE WE MEASURING VITAMIN D IN INFLAMMATORY BOWEL DISEASE (IBD) PATIENTS?

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**Introduction** There is increasing interest in the role of vitamin D in IBD, outside of its traditional role in metabolic bone disease. Novel insights into additional roles for vitamin D are being established and these include anti-inflammatory and immune-modulating effects. Active vitamin D is known to exert its biological functions via the vitamin D receptor (VDR). Immune cells have been found to express VDR and possess the enzymes necessary to produce active vitamin D. This suggests vitamin D may have actions beyond endocrine activity. Furthermore, Vitamin D deficiency has been linked to higher rates of cancers including colorectal cancer. Previous studies have found that almost 50% of the IBD patients were vitamin D deficient at some point and 11% were severely deficient. Vitamin D deficiency has been demonstrated to be independently associated with higher disease activity scores in patients compared to those that had normal levels of vitamin D. Furthermore, vitamin D deficient Crohn's patients have a poorer quality of life when compared to patients who are not vitamin D deficient. Currently, ECCO guidelines do not mention measurement of vitamin D in patients with IBD but given its effects, we set out to identify whether we were checking for and correcting for vitamin D deficiency in our IBD patients.

**Methods** The aim of the study was to investigate whether we were measuring vitamin D levels at any encounter in out IBD patients. This study was conducted in a busy District General Hospital in North London. Information was gathered using the hospital powerchart system and the IBD database of patients.

**Results** A total of 225 patients were correctly identified as having IBD. Of these, 157 (70%) had Ulcerative colitis and 68 (30%) had Crohn's disease. 24 (15%) Ulcerative colitis patients and 8 (12%) Crohn's patients had their vitamin D checked on hospital records. The range of vitamin D levels were 14−84 with lower limit of normal being 50. 13/32 (41%) patients has low vitamin D levels Of these only two patients were also under the Rheumatology team for co-existing arthropathy/arthritis.