Introduction Ulcerative colitis (UC) is a chronic inflammatory disorder of unconfirmed aetiology. Clinical assessment involves invasive endoscopic examination with a small yet significant procedural risk, on which therapeutic decisions are made. Non-invasive biomarkers may be better tolerated and reduce procedural costs and risks. Matrix metalloproteinases (MMP) are enzymes involved in tissue remodelling; MMP are elevated in mucosa and urine of children with active UC. We measured urinary MMP activity in adult patients with UC, matched controls investigated for functional symptoms and normal healthy volunteers to evaluate MMP activity in active compared with quiescent UC patients and does not correlate with UC disease activity. Comparisons of macroscopically inflamed mucosa compared with non-inflamed mucosa from the same patients also demonstrated significant reduction in concentration of IFNγ (p<0.001), IL-4 (p<0.005) and IL-17A (p<0.002). No significant differences were noted between normal tissue from UC patients and external controls. Conclusion Our findings suggest that IL-8 (a neutrophil chemoattractant) is elevated and TGFβ (involved in cell repair) is reduced with no change demonstrated for TNFα. Significantly lower concentration of IFNγ, IL-4 and IL-17A suggests downregulation of Th1, Th2 and Th17 adaptive immune response. These findings suggest that the inflammatory response in UC may predominantly involve IL-8 mediated neutrophil infiltration and failure of TGFβ mediated tissue healing, with limited evidence for the role of TNFα in mild-moderate distal UC.

Competing interests None declared.