Patient preferences and current practice for adults with steroid-resistant ulcerative colitis: POPSTER mixed-methods study

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Disclaimer: This report contains transcripts of interviews conducted in the course of the research and contains language that may offend some readers.

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Scientific summary

The POPSTER mixed-methods study

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Scientific summary

Background

Ulcerative colitis (UC) runs a relapsing and remitting course, causing debilitating symptoms, reducing quality of life and resulting in severe flares that often necessitate hospitalisation. One of the treatments for UC is corticosteroids; however, around half of patients do not respond to this treatment or relapse when the dose is reduced, which can lead to the prolonged use of corticosteroids and damaging side effects. In the UK, a number of other treatments are recommended for UC, but the current research evidence on these is limited. Furthermore, there is no universally agreed definition of steroid resistance (i.e. dose and duration of steroids) in this patient group.

There is a need for a trial involving a clearly defined population of steroid-resistant patients to evaluate the clinical effectiveness and cost-effectiveness of candidate treatments. For such a trial to be designed, further understanding of (1) how best to describe steroid resistance in UC and (2) patients' and health-care professionals' views of treatment options is required. This will also help to identify equipoise and acceptable intervention and comparator arms for the trial.

Objectives

The aim of this research was to answer the question 'How are adults with steroid-resistant UC being managed in secondary care, and how does current practice compare with patient and clinician preferences?'. Correspondingly, the research had five objectives:

1. to describe current practice in the management of adults with steroid-resistant UC and how medical resistance is defined
2. to understand how treatment pathways and definitions of steroid resistance are operationalised in practice
3. to understand patient experiences of different treatment options and approaches to decision-making
4. to estimate the relative utility of different treatment options and to elicit patient and clinician preferences for these and their willingness to trade between them
5. to make recommendations about future research and treatment options.

Methods

The PoPSTER (Patient preferences and current Practice in STERoid resistant ulcerative colitis) study was a mixed-methods study that comprised an online survey, qualitative interviews with patients and health-care professionals, discrete choice experiments (DCEs) and a multistakeholder workshop.

Setting

NHS inflammatory bowel disease (IBD) services in the UK.

Participants

Adults with UC and IBD health-care professionals (i.e. clinicians and nurses) were included in the study.

Health-care professional survey

A cross-sectional survey of IBD health-care professionals was conducted online using the Qualtrics® platform (Qualtrics, Provo, UT, USA) between 20 March and 15 July 2019. Respondents were invited to take part via professional networks [e.g. the IBD section of the British Society of Gastroenterology (London, UK) and the Royal College of Nursing Inflammatory Bowel Disease Nurses Network (London, UK)] and social media. The survey included questions on definitions of steroid resistance and dependence, treatment pathways and clinical scenarios representing patients with moderately severe steroid-resistant or steroid-dependent UC, factors influencing treatment preferences, and practice around the use of endoscopy and referral for surgery. Data were analysed descriptively using chi-squared or McNemar's tests on outcomes of interest, as appropriate, using R software (The R Foundation for Statistical Computing, Vienna, Austria).

Health-care professional interviews

A qualitative interview study with IBD health-care professionals recruited via professional networks (as described above) was carried out between 28 June and 31 October 2019. The interviews included questions about how health-care professionals operationalise definitions of steroid resistance, current practice and preferences for treatment options for patients with steroid-resistant UC. The interviews also included questions on the types of information that health-care professionals require to make decisions about the treatments they offer.

Patient interviews

A qualitative interview study with adults living with UC recruited from three IBD services in the north of England was undertaken between 4 June and 31 October 2019. The interviews were used to explore patients' lived experiences of UC and approaches to treatment decision-making, and they were tailored to patients' divergent treatment choices and experiences.

For both qualitative studies, the data were collected during telephone interviews, digitally recorded and then transcribed. Two researchers performed inductive thematic analysis using NVivo software (QSR International, Warrington, UK). Codes were cross-checked and data saturation was confirmed prior to the close of both studies. The qualitative studies were also used to identify the treatment attributes to be evaluated in the DCEs.

Health-care professional discrete choice experiment

A DCE was conducted via an online survey of health-care professionals with expertise in IBD. Health-care professionals were recruited via professional networks and social media between June and October 2020. The DCE involved 13 tasks in which respondents selected a preferred treatment when presented with two competing hypothetical treatment profiles for a steroid-resistant UC scenario. The profiles described five treatment characteristics, focusing on clinical outcomes and safety. DCE responses were analysed using conditional logistic regressions, and regression coefficients were used to calculate benefit–risk trade-offs and predict uptake rates of selected drugs currently prescribed to patients.

Patient discrete choice experiment

A DCE was conducted via an online survey of adults with UC. Participants were recruited through two NHS trusts and via social media between September and December 2020. Participants were shown 13 DCE tasks, that is, a series of side-by-side comparisons of competing hypothetical treatment characteristics, and were asked to select a preferred treatment. Participants also completed a ranking exercise in which they were asked to rank four commonly used treatments in order of preference. The survey responses were analysed using descriptive statistics and regression analyses.

Multistakeholder workshop

An online multistakeholder workshop hosted on Blackboard Collaborate (Blackboard Inc., Washington, DC, USA) was held on 11 March 2021. The workshop was attended by IBD clinicians and nurses and

patient representatives. The key findings from other elements of the PoPSTER study were presented at the workshop and participants were then asked to discuss the findings in small groups, with a view to generating recommendations for research and practice around steroid-resistant UC.

Results

Health-care professional survey

One hundred and sixty-eight health-care professionals (68% medics and 30% nurses; 2% missing) with expertise in IBD (with a median of 7.5 years since appointment), representing areas across the UK, consented to take part in the survey. Definitions of steroid resistance varied, with 68% of health-care professionals indicating an incomplete response to 40 mg per day of prednisolone after 2 weeks and a further 58% indicating an incomplete response to 40 mg per day of prednisolone after 4 weeks. Only 13% of health-care professionals felt that steroid-resistant and steroid-dependent disease should be treated identically. The survey also found that anti-tumour necrosis factor drugs (particularly infliximab) were the most frequently offered drugs across most steroid-resistant (and steroid-dependent) patient scenarios. In addition, the majority (48%) of health-care professionals stated that they would refer patients with steroid-resistant UC for surgery 'at any time'. Other respondents preferred to wait to refer for surgery until all medical options had been tried (12%), until one (6%) or two (9%) biologics had been tried unsuccessfully or until the patient was deemed steroid resistant (2%). A large proportion of respondents felt that endoscopy is not warranted (43% in the case of steroid-resistant disease and 58% for steroid-dependent disease).

Health-care professional interviews

Twenty health-care professionals (60% clinicians, 40% nurses) with expertise in IBD (with a median of 14 years since appointment) participated in the interviews. Half were from secondary care and all regions in England and Wales were represented. In line with the findings from the survey, most participants agreed that 2 weeks was an appropriate time frame in which to assess steroid resistance, although some participants suggested that 4 weeks would give a clearer indication of a lack of response in some patients. Health-care professionals identified situations in which surgery may become necessary for steroid-resistant patients (e.g. when patients had tried all available medical treatments or were 'running out of options'). Health-care professionals also identified a wide range of influences on treatment decisions, relating to treatment effectiveness (e.g. alleviation of symptoms, speed of response and maintaining remission) and patient preferences or lifestyle factors (e.g. disease severity, work and family commitments, patient burden and compliance). Participants also mentioned route of administration, side effects and practical aspects relating to the costs of treatment and service capacity. Most health-care professionals described surgery as a longer-term option for people with UC, but reported that they typically present it to patients at an early stage alongside medical treatment options.

Patient interviews

Thirty-three adults with UC participated in the interviews. Fifty-one per cent of participants were female; participants' median age was 39 years and they had a median time since diagnosis of 6 years. Treatment effectiveness was the primary concern of all participants when choosing a new treatment. Participants explained that alleviating symptoms, and thereby improving quality of life, was the most important driver of their treatment preferences. Participants indicated that IBD health-care professionals heavily guided their treatment discussions and choices. Most participants described their valued relationships with nurses and clinicians, and how they trust and respect the clinical expertise of these professionals. In addition to this, factors influencing treatment choices included side effects and route of administration (e.g. subcutaneous, oral pill, infusion), but, overall, participants placed limited value on these factors relative to treatment effectiveness. There were also changes over time, with an increased willingness to try alternative treatments and, eventually, surgery, depending on the severity and duration of symptoms and, crucially, as medical treatment options are exhausted.

Discrete choice experiment

Health-care professionals

One hundred and sixteen health-care professionals completed the DCE. When choosing a treatment, health-care professionals placed the highest priority on long-term remission rates followed by risk of serious infection. Long-term remission and induction of response were valued more highly than mucosal healing. Health-care professionals would accept the highest lymphoma risk (5 cases per 10,000 patient-years) if the treatment improved long-term remission rates. Risk tolerance was lowest for mucosal healing (2 cases per 10,000 patient-years) and risk tolerance was higher among clinicians at tertiary centres (7 cases per 10,000 patient-years at tertiary centres vs. 4 cases per 10,000 patient-years at secondary centres). Predicted probability of uptake was highest for infliximab (62%), followed by tofacitinib (18%), vedolizumab (15%) and adalimumab (5%).

Patients

One hundred and fifteen patients completed the DCE. Patient preferences were strongest for treatments with lower rates of side effects. For example, compared with a treatment that had very common side effects, patients were more likely to take a treatment with very rare side effects (β 2.937; $p < 0.01$), even if those very rare side effects are usually more severe. Patients preferred a treatment with a higher likelihood of induction of response, but they were unable to differentiate between a 50% success rate and a 60% success rate. Higher levels of remission (β 0.065; $p < 0.01$) and faster-acting treatments were preferred (β −0.145; $p < 0.01$). Taking a tablet daily at home (β 0.848, $p < 0.01$) or receiving injections at home every 8 weeks (β 0.541; $p < 0.01$) were preferable to receiving infusions every 8 weeks. Interestingly, there was no significant difference between receiving infusions every 8 weeks at hospital and injections every 2 weeks at home (β −0.029; $p = 0.85$). When ranking treatments, the most preferred were infliximab (38%) and tofacitinib (38%), followed by vedolizumab (17%) and adalimumab (6%).

Multistakeholder workshop

Nine participants (two people with UC, three consultant gastroenterologists and four IBD nurses) attended the workshop. The key findings from across the PoPSTER study were corroborated by participants, who made a number of recommendations for improving practice for people with steroid-resistant UC, as well as recommendations for future research.

Conclusions

The results from the PoPSTER study help to improve understanding of treatment decisions for steroid-resistant UC. The study also provides useful data to identify the characteristics to consider when choosing treatments to evaluate in future randomised controlled trials. The findings of the PoPSTER study may also be used to improve discussions between patients and health-care professionals when reviewing treatment options for steroid-resistant UC. This research highlights the need for consensus work to establish an agreed definition of steroid resistance in UC and a greater understanding of the optimal use of tofacitinib and surgery for this patient group. A randomised controlled trial comparing infliximab and tofacitinib for adults with steroid-resistant UC is recommended.

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