Inflammatory bowel disease (IBD) encompasses both Crohn’s disease and ulcerative colitis (UC). The most common presentation is UC, which affects around 24 in every 10,000 people in the UK. It is a long-term condition which causes inflammation in the colon and rectum.

Unlike Crohn’s, the inflammation is continuous - not in patches - but it only affects the colon, rectum and the gut wall’s surface layers. It typically starts at the distal colon.

The main differences in presentation between UC and Crohn’s are listed in the table below.

### Who is affected?

Although UC can occur at any age, the peak incidence is in people aged 15-25 years, with a second, smaller, peak between the ages of 55-65. The condition appears in both men and women and seems to have a genetic link – one in four people with UC have a family history of the condition.

Contrary to the positive correlation between smoking and Crohn’s, UC develops more frequently in those who do not smoke.

### Symptoms of ulcerative colitis and Crohn’s disease

<table>
<thead>
<tr>
<th>Where</th>
<th>Ulcerative colitis</th>
<th>Crohn’s disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colonic</td>
<td>Colon and rectum</td>
<td>Any part of the gut</td>
</tr>
<tr>
<td>Inflammation</td>
<td>Continuous</td>
<td>Patchy</td>
</tr>
<tr>
<td>Layers affected</td>
<td>Surface layers</td>
<td>All layers of the gut</td>
</tr>
<tr>
<td>Age</td>
<td>Peaks between 15-25 and 55-65 years old</td>
<td>Peaks between 10-30 and 50-70 years old</td>
</tr>
<tr>
<td>Gender</td>
<td>Equally affected</td>
<td>Equally affected</td>
</tr>
<tr>
<td>Incidence</td>
<td>240 per 100,000 people in the UK</td>
<td>145 per 100,000 people in the UK</td>
</tr>
<tr>
<td>Smokers</td>
<td>Reduced risk</td>
<td>Increased risk</td>
</tr>
<tr>
<td>Extra-abdominal symptoms</td>
<td>Less common</td>
<td>Common</td>
</tr>
<tr>
<td>Treatment</td>
<td>Aminosalicylates (eg 5-ASA) are most common for remission maintenance</td>
<td>Corticosteroids are often used in remission maintenance</td>
</tr>
<tr>
<td>Surgery</td>
<td>Required by up to 30% of patients</td>
<td>Required by more than 50% of patients</td>
</tr>
</tbody>
</table>

### While similar in presentation, the inflammatory bowel diseases ulcerative colitis and Crohn’s disease do have some important differences (see below)

However, you should advise patients against smoking as a way of treating or preventing UC.

### What causes the condition?

UC is an autoimmune condition, meaning the body attacks itself. One theory to explain why this occurs is that the immune system mistakes the gut’s flora bacteria, which aids digestion, as a bacterial infection. This results in the body’s immune response causing the colon and rectum to become inflamed.

Another theory is that UC is the immune system’s prolonged response to a pathogen: the inflammation should stop when the infection is overcome, but it continues.

### Symptoms

Every patient’s experience of UC is unique, but there several symptoms they are likely to present with:

- Abdominal pain – often described as colicky or a dull ache
- Extreme tiredness
- Feeling of an urgent, strong need to defecate
- Frequent diarrhoea – often containing blood or mucous
- Fever
- Unexplained weight loss
- Unidentified general feeling of discomfort or illness (malaise).

### Flare-ups

Patients may go weeks or even months without experiencing any symptom of UC. This period is referred to as remission.

However, symptoms can return at any point – this is known as a flare-up. Flare-ups are characterised by excessive watery stools and bloody diarrhoea. In addition, patients may experience other symptoms, such as painful or swollen joints, mouth ulcers, skin irritation or red eyes. Severe symptoms may also occur, such as shortness of breath or an irregular heartbeat.

Although it is not understood what triggers a flare-up, it is thought that gastrointestinal (GI) infection or stress can contribute to one occurring.

### Diagnosis

When a patient presents with the symptoms of UC, you should refer them to their GP for formal diagnosis. In addition to observing symptoms, a doctor will use blood tests to
rule out anaemia and detect inflammatory markers in the blood. A stool sample will also be taken to rule out an infection as the cause of the symptoms, such as gastroenteritis.

A colonoscopy and biopsy is commonly used in diagnosing UC. However, abdominal imaging is often also carried out to exclude a perforated intestine or a toxic megacolon (inflammation in the deeper layers of the colon, see Other issues on the following page).

**Treatment**

As UC is a chronic, life-long condition (see Update 1776, Newly diagnosed chronic conditions), the aims of treatment are to:

- improve symptoms
- maintain remission
- ensure quality of life.

UC can have a significant impact on a patient’s quality of life and morbidity. In addition, mental health problems, such as depression or anxiety (see Update 1795, Diagnosing depression), are more common than in the general population.

However, there is an uncertainty about whether UC contributes to the development of mental health problems, or whether they lead to the condition itself. Regardless, there is a need to educate patients to ensure they are able to manage their condition to the best of their abilities.

Aminosalicylates

The mainstay of medical treatment are the aminosalicylates (5-ASAs, eg mesalazine). This is the drug of choice for treating UC and is indicated for induction of remission in mild-to-moderate cases. Prolonged-release preparations, such as Mezavant, are useful for their once-daily administration and are no less effective than multiple daily dosing. There are different release characteristics between preparations, but there appears to be little difference in overall efficacy.

Diseases affecting the rectum or the end of the colon can be treated using local preparations, such as foam enemas and suppositories. These are particularly helpful where there has been difficulty retaining liquid enemas.

There is evidence that the number of flare-ups experienced increases when mesalazine preparations are changed. Flare-ups are treated with 2.4-4.8g daily oral mesalazine and maintenance of remission with up to 2.4g daily oral mesalazine.

Olsalazine and balsalazide are newer 5-ASAs that are sometimes used as an alternative to mesalazine. Sulfasalazine is an older aminosalicylate and has a greater incidence of side effects than the newer drugs in this class.

When using aminosalicylates, any unexplained bleeding, bruising, sore throat or malaise should be reported, as blood dyscrasia – a blood disorder caused by the presence of abnormal material – can occur. In addition, renal function should be monitored before starting medication, then again at three months and then annually.

**Corticosteroids**

These can be used as an alternative to aminosalicylates, but are less effective. They can also be used in combination to treat proctitis that does not respond to local aminosalicylate treatment alone. Corticosteroids are only used to treat flare-ups and have no role in UC maintenance treatment. They can be administered topically, orally or intravenously (IV).

**Surgery**

This is an option in those patients where medication has failed to improve symptoms sufficiently. It may also be needed as an emergency course of action when UC is severe. Around 30% of UC patients will require surgery, involving a colectomy with the resultant stoma. This is considered curative, as UC is confined to the colorectum.

**Mercaptopurine and azathioprine**

These are options for maintaining remission, with the appropriate monitoring, if aminosalicylates are inadequate. Patients must use contraception during the course of this treatment and for at least three months after stopping using these medicines.

**Severe flare-ups**

When UC becomes severe and treatments to initiate remission are ineffective, it may be necessary to manage patients in hospital. There, patients will be given fluids to help prevent dehydration. In addition, they can be given IV corticosteroids as well as immunosuppressants, such as ciclosporin and anti-tumour necrosis factor (TNF) inhibitors.

**Ciclosporin**

Ciclosporin I is only used when UC is severe, the patient is facing colectomy and is not responding to IV steroids. It is more powerful than other medications used to treat milder cases of UC and works quickly – within a few days. It is an immunosuppressant, which blocks the action of lymphocytes. It is given via a IV infusion initially, and if there is a response then it is suitable to switch to oral ciclosporin, and then initiate oral thiopurines.

Although effective at managing severe cases of UC, patients taking ciclosporin require frequent monitoring. It also has several side effects, such as:

- abnormal liver function
- excessive hair growth
- headaches
- increased susceptibility to infections
- malaise
- neurotoxicity, leading to seizures
- renal impairment
- tremors.

**Anti-TNF therapies**

TNF-alpha is a pro-inflammatory cytokine – a chemical that encourages downstream promotion of the inflammatory response that it is commonly seen in a number of disorders, such as UC. The monoclonal antibodies, infliximab (Remicade), adalimumab (Humira) and golimumab (Simponi) inhibit TNF-alpha and help prevent the inflammatory cycle.

A National Institute for Health and Care Excellence (Nice) technology appraisal published in 2015 details TNF-alpha therapy use in UC. The treatment is recommended in moderate-to-severe active UC in adults where the disease has responded inadequately to conventional therapies – including corticosteroids, mercaptopurine and azathioprine – or who cannot take or have medical contra-indications for such therapies. According to Nice, these drugs should be given as a planned course of treatment until they fail or for 12 months, whichever is shorter. Patients should then have their anti-TNF therapy reassessed to determine
whether it should be continued.

Once in remission, a trial withdrawal should be considered. Infliximab is administered by IV infusion, whereas adalimumab and golimumab are given by subcutaneous injection. Biosimilar versions of infliximab are also available.

Adequate contraception is required for at least six months after stopping infliximab. There are several side effects to anti-TNF treatments, such as:
- anaphylactic reactions
- delayed reactions, such as joint pain, myalgia or stiffness
- infection
- reactivation of conditions, such as tuberculosis and hepatitis B
- risk of malignancy (lymphoma).

### Other issues

The risk of colorectal cancer in UC patients is around twice that of the general population. This risk is further increased if the patient does not adhere to treatment. Colonoscopic surveillance should start 10 years after UC symptoms first develop. This can help detect precancerous changes early on and potentially prevent progression to colorectal cancer.

The development of osteoporosis is common, but minimising corticosteroid use reduces the risk. Bisphosphonate prophylaxis is recommended in over-65s, but it requires adequate contraception should be used for at least six months after stopping infliximab. Under-65s who require more than three months of corticosteroids should have their bone density measured, and bisphosphonate therapy should commence if the T-score (which measures bone density) is 1.5 or less.

Toxic megacolon can be triggered by a number of different factors, including anticholinergics, hypokalemia and opiates. This complication can stop the colon working and cause it to widen, leading to it rupturing in extreme circumstances. Intestinal perforation occurs when chronic inflammation and ulceration of the intestine weakens the intestinal wall so much that a hole develops. This perforation is potentially life-threatening, as the intestine’s contents can spill into the abdominal cavity and cause a serious infection called peritonitis.

### Self-help

Crohn’s and Colitis UK (crohnsandcolitis.org.uk) is the leading UK charity supporting people with IBD. They have a wealth of information on every aspect of UC and Crohn’s, as well as a helpline.

Carrying a Just Can’t Wait card can help IBD patients access toilet facilities located in shops and workplaces, which are otherwise inaccessible to the public. It can be obtained from the Bladder and Bowel Foundation (bladderandbowelfoundation.org), along with Radar keys for accessing locked public toilets reserved for people with disabilities.

Paying attention to diet and lifestyle factors, such as stress, may help to reduce the risk of flare-ups.

Physical activity will also help with a patient’s overall physical and mental wellbeing. Exercise need not be limited to light activities – Siobhan-Marie O’Connor and Kathleen Baker, British Olympians who earned silver medals in the 2016 games, both have IBD.

Not smoking is also important when managing UC, while adherence to treatment greatly reduces risk of complications – particularly bowel cancer.

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### Take the 5-minute test

1. In ulcerative colitis (UC), the inflammation is continuous and only affects the gut wall surface layers of the colon and rectum. **True or false?**
2. Peak incidence of UC occurs between the ages of 25–35 and 65–75. **True or false?**
3. Women are more likely to suffer from UC than men. **True or false?**
4. Flare-ups of UC are characterised by symptoms of excessive watery stools and bloody diarrhoea. **True or false?**
5. The newer 5-ASAs, olsalazine and balsalazide, are more effective than mesalazine and have fewer side effects. **True or false?**
6. Patients taking aminosalicylates should report any unexplained bleeding, bruising, sore throat or malaise, as blood dyscrasia can occur. **True or false?**
7. Corticosteroids are used first line in maintenance treatment of UC. **True or false?**
8. Adequate contraception should be used during treatment with mercaptopurine and for at least three months after stopping. **True or false?**
9. Side effects of ciclosporin include abnormal liver function, excessive hair growth, headaches and increased susceptibility to infection. **True or false?**
10. Nice recommends anti-TNF-alpha therapy to treat moderate-to-severe active UC in adults, where the disease has responded inadequately to conventional therapies. **True or false?**

### Ulcerative colitis CPD

**Reflect** How does ulcerative colitis (UC) differ from Crohn’s disease? What is the first choice treatment for initiating and maintaining remission in UC? What are the side effects of anti-TNF therapies?

**Plan** This article includes information about the differences between UC and Crohn’s, as well as the causes, diagnosis and symptoms of UC. Treatments used to reduce symptoms and maintain remission are also discussed.

**Act** Find out more about UC on the Patient website at tinyurl.com/ibduc1

Read the MUR tips for UC on the C+D website at tinyurl.com/ibduc2, then identify any patients who might benefit from a patient consultation or MUR

Find out more about diet in UC from the crohns.org.uk website at tinyurl.com/ibduc3

Find out more about colostomy surgery in UC from the NHS Choices website at tinyurl.com/ibduc4 and at tinyurl.com/ibduc5

**Evaluate** Are you now confident in your knowledge of the symptoms and treatment of UC? Could you give advice to patients about the effects and complications of this condition?