

Improving life for  
people affected  
by inflammatory  
bowel diseases



# Drugs used in IBD



Crohn's and Colitis UK is the working name for the National Association for Colitis and Crohn's Disease (NACC). NACC is a voluntary Association, established in 1979, which has 30,000 members and 70 Groups throughout the United Kingdom.

Membership of the Association costs £12 a year. New members who are on lower incomes due to their health or employment circumstances may join at a lower rate. Additional donations to help our work are always welcomed.

*Crohn's and Colitis UK publications are research based and produced in consultation with patients, medical advisers and other health or associated professionals. They are prepared as general information on a subject with suggestions on how to manage particular situations, but they are not intended to replace specific advice from your own doctor or any other professional. Crohn's and Colitis UK does not endorse or recommend any products mentioned.*

*We hope that you find the information helpful and relevant. We welcome any comments from readers, or suggestions for improvements. References or details of the research on which this publication is based, and details of any conflicts of interest, can be obtained from Crohn's and Colitis UK at the address below. Please send your comments to Helen Terry at Crohn's and Colitis UK, 4 Beaumont House, Sutton Road, St Albans, Herts AL1 5HH, or email [h.terry@crohnsandcolitis.org.uk](mailto:h.terry@crohnsandcolitis.org.uk)*

## Contents

Introduction	3
What types of drugs are used in IBD?	3
Can other medicines affect IBD drugs?	4
How are drugs taken?	5
What checks will I need?	6
How are aminosalicylates (5-ASAs) used?	6
What are the possible side-effects of 5-ASAs?	8
What are corticosteroids?	9
How are corticosteroids used in IBD?	9
What are the possible side-effects of corticosteroids?	10
How are immunosuppressants used in IBD?	12
Which immunosuppressants are used?	12
How are biologics used in IBD?	15
How are antibiotics used in IBD?	16
Which antibiotics are used?	17
What about symptomatic drugs?	18
What about pregnancy and breastfeeding?	21
How safe are IBD drugs?	21
Can I take part in clinical trials?	22
Who can I talk to about my treatment?	22
Where can I get further information?	23
Other useful organisations	24

## Introduction

Inflammatory Bowel Disease (IBD) is the name of a group of illnesses, of which Ulcerative Colitis (UC) and Crohn's Disease are the two main ones. In IBD, the intestines, which are also called the bowels or gut, become swollen and inflamed (red and sore). If you have IBD your doctor is likely to prescribe drugs to treat your condition. We do not yet know what causes IBD, so these drugs are not cures, but they can be very effective in treating your symptoms.

IBD is a chronic condition, which means that it is ongoing and usually lasts throughout your life. It can change unpredictably: you may have times of good health, called remission, when there are few or no symptoms, alternating with times when your symptoms are more active, called relapses or 'flare-ups'. Drugs are first prescribed to reduce the inflammation in your bowels to give you relief from symptoms and bring about remission. Once your condition is under control, your doctor usually continues to prescribe drugs to help maintain remission and prevent a relapse. This is called maintenance therapy.

This booklet aims to answer questions you may have about drugs used to treat IBD. We hope it will give you more understanding about drug treatment and help you to make informed decisions about your care. For the use of IBD drugs in children, see our booklet: *IBD in Children: a parent's guide*.

## What types of drugs are used in IBD?

As Crohn's and UC are diseases that cause inflammation, anti-inflammatory drugs are the major treatment used to stop or dampen down the inflammation. These are not the same anti-inflammatory drugs as the 'Non-steroidals' (NSAIDs), such as ibuprofen, that are used for muscular injuries. Inflammation is part of the body's normal immune response when it is trying to protect us from infection and foreign substances, such as viruses and toxins, entering the body. In IBD the

immune system reacts inappropriately, triggering an inflammatory response when there are no foreign substances to fight off. In the process, the body sends white blood cells and their chemicals to the wall of the intestine, which results in the swelling, redness and soreness we know as inflammation.

- There are four main groups of anti-inflammatory drugs which work in different ways to reduce or control inflammation:
- Aminosalicylates (5-ASAs)
- Corticosteroids – often just called Steroids
- Immunosuppressants
- Biologics

Besides these drugs, antibiotics are sometimes used to treat IBD, particularly Crohn's. Other drugs are used in IBD to help reduce symptoms, such as diarrhoea or pain, but they do not reduce inflammation.

### **Can other medicines affect IBD drugs?**

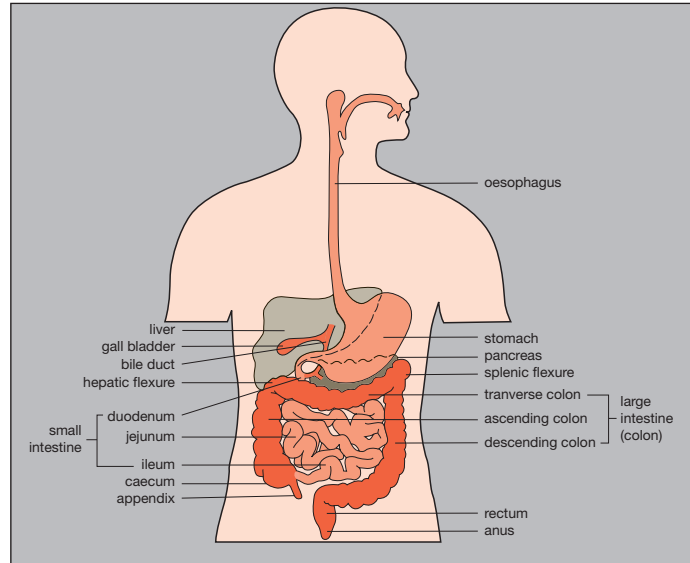
Besides taking drugs for your IBD, you may be taking drugs for other conditions, over-the-counter medicines or herbal or homeopathic remedies or other alternative or complementary treatment. Interactions between drugs and other treatments may make a drug less effective, produce a more intense effect or cause unexpected side effects. Therefore, it is important to tell your doctor about all medication you are taking, as well as any alternative or complementary treatment, and any other medical condition you may have. It is a good idea to carry on you a list of your medication and doses.

## How are drugs taken?

There are three different ways of taking drugs: topical, oral or by injection. The best way will depend partly on the area of the intestines that is affected, and partly on the nature of the drug itself.

### Topical

This means applying a drug directly to an affected area of the body. In IBD, topical treatment is only possible when the inflammation is in the rectum (proctitis) or near the end of the colon. A suppository or an enema releases a steroid or aminosalicylate (5-ASA) directly to these parts of the colon. A suppository is a small bullet-like capsule of the drug that you insert into the rectum via the anus. An enema is a foam or liquid delivered by a specially designed applicator, which you insert into the anus.



Liquid enemas can reach furthest into the colon and are generally taken at bedtime, because lying down will help the liquid to travel further along the colon. Sometimes, a foam enema may be preferable early in an attack when liquids are difficult to retain, changing to a liquid when the rectum is improving and less sensitive. One of the main advantages of topical treatment is that other parts of the body are not so readily affected by the drug. This, in turn, reduces possible side-effects. The drug also works more effectively because it is placed directly on the site of inflammation.

## Oral

This means taking medication by mouth. Tablets, capsules or granules taken orally are specially designed to release the active drug in the inflamed parts of the small and large intestine. It is important therefore that you swallow tablets and capsules whole. Some drugs are absorbed from the gut into the bloodstream to reach other parts of the body such as the eyes, joints and skin which can become inflamed in people with IBD.

The only drugs used in IBD which cannot be taken orally are the biologics, infliximab and adalimumab.

## Injection

Some drugs are injected intravenously (into a vein) or intramuscularly (into a muscle) or subcutaneously (under the skin). Steroids and immunosuppressants are given intravenously to get the quickest response in very severe flare-ups. This will only be done in hospital. Infliximab taken intravenously is also only given in hospital. Methotrexate, injected intramuscularly or subcutaneously, and adalimumab, injected subcutaneously, are sometimes managed at home.

## What checks will I need?

Before you begin taking a drug, you will usually have blood tests and liver and kidney tests to check if it is suitable for you. Whilst you are taking a drug, the type and frequency of ongoing regular tests will depend on which drug you are taking. It would be a good idea to discuss what checks you need with your doctor or specialist nurse. See our individual drug treatment information sheets for more details.

## How are aminosalicylates (5-ASAs) used?

Aminosalicylic acids, or 5-ASAs, which are chemically related to aspirin, work by dampening down the inflammatory process, so allowing damaged tissue to heal. 5-ASAs are often used long-term to maintain remission, as well as to treat mild to moderate attacks of IBD.

The first of these drugs to be developed was sulphasalazine. Sulphasalazine (Salazopyrin) was designed for the treatment of arthritis and its use in Ulcerative Colitis was discovered in the early 1940s. It is not used as commonly nowadays for IBD, as there may be a higher chance of side-effects when compared to the newer preparations, though it may be helpful if you have arthritis with IBD.

The later 5-ASAs target different parts of the intestines in various ways. These include mesalazine (Asacol, Pentasa, Salofalk), olsalazine (Dipentum) and balsalazide (Colazide). Further preparations of mesalazine have been introduced more recently: Ipocol, Mesren and Mezavant XL. Some 5-ASAs can be taken as a once a day high dose, which some people find easier to take.

5-ASA is usually the first treatment for mild to moderate flare-ups of Ulcerative Colitis, but its main role is in maintaining remission. Higher doses are used for attacks of UC, lower doses are used to prevent them on a long-term basis.

These drugs are commonly used to treat mild to moderate Crohn's Disease and to help reduce the chances of disease recurring after operations. There is some evidence that 5-ASAs are effective in bringing about and maintaining remission in Crohn's, but this may depend on a higher dosage and the particular formulation of the drug. However, a recent European study found the evidence was inconsistent and there was a need for further research.<sup>i</sup>

Some people with IBD have a slightly increased risk of developing colon cancer. Another possible benefit of using 5-ASA long-term is that it may decrease this risk, so if you have UC or Crohn's Colitis (Crohn's in the colon) your doctor may advise you to stay on a 5-ASA continually. For more information see our information sheet: *Bowel cancer and IBD*.

It is important to choose the right formulation of 5-ASA, as each releases the drug in different parts of the intestine. Depending on where your IBD affects you, your doctor will recommend a suitable 5-ASA for you. Most specialists in IBD believe that you should not be switched from one brand to another unless there is a good clinical reason for doing so.

The table shows the parts of the intestines at which different 5-ASA formulations work:

Drug Name – generic (Trade)	Area of intestines treated
sulphasalazine (Salazopyrin)	colon
mesalazine (Asacol; Ipocol; Mesren)	terminal ileum and colon
mesalazine (Pentasa)	entire small intestine and colon
mesalazine (Salofalk)	ileum and colon
mesalazine (Mezavant XL)	colon
olsalazine (Dipentum)	colon
balsalazide (Colazide)	colon

### What are the possible side-effects of 5-ASAs?

Common side-effects of 5-ASAs include headache, indigestion, nausea and watery diarrhoea, as well as mild allergic reactions with rash, itchiness and fever.

Less common side effects are complications with the liver, lungs, pancreas and kidneys.

Sulphasalazine can cause male infertility by reducing the sperm count, but this usually resolves once the drug is stopped. See our information sheet: Fertility and IBD. Sometimes, when there is an increased demand by the body for folic acid, such as during pregnancy, sulphasalazine can reduce the body's ability to absorb this vitamin. Folic acid is essential for blood cell formation. A folic acid supplement is then recommended.

Unlike corticosteroids, the 5-ASA drugs do not suppress the adrenal glands (see below). This means there are fewer side-effects with 5-ASAs than with steroids. It is usual to have regular blood tests at the beginning of treatment and then every six to twelve months to check for any unwanted effects of the drug. If you are taking sulphasalazine you need slightly more regular blood tests.

## What are corticosteroids?

We all produce small amounts of corticosteroid in our bodies. Corticosteroids are hormones produced by the adrenal glands which have a number of very important functions in the body. These include: keeping up blood pressure; regulating salt balance; maintaining blood sugar level and preparing the body for stress. Corticosteroids are completely different from the body-building anabolic steroids and from sex hormones.

When two types of steroid, hydrocortisone and cortisone, were discovered, it was soon found that giving larger amounts than are normally found in the body had beneficial effects. In particular, they reduced the redness, swelling and pain of inflammation. Before the introduction of cortisone as a treatment, severe attacks of Ulcerative Colitis were much more dangerous than they are today. Drug trials in Europe and North America have also shown major benefits in active Crohn's.

## How are corticosteroids used in IBD?

Corticosteroids such as prednisolone, are mainly used to treat acute attacks in both UC and Crohn's. In general, eight out of ten people with such attacks will respond to treatment with steroids. People often notice an improvement in their symptoms within days of starting the drug.

Corticosteroids can be given by injection, as tablets, or topically. When injected or taken by mouth the drugs can reduce inflammation throughout the whole body. Not only will the treatment reduce inflammation in the gut, but also in the eyes, skin and joints, if affected. The dose of drug given has to be large enough to be effective and it is usual to start with a relatively high dose, to get the desired response, and then to reduce it in steps. Since it takes time for the inflamed lining of the intestine to heal, treatment is usually needed for a period of weeks. During this time you may need supplements of vitamin D and calcium, as steroids can affect the bones. For more information see our information sheet: *The Bones and IBD*.

Newer corticosteroids include budesonide (Entocort or Budenofalk) and beclometasone dipropionate (BDP) (Clipper). Budesonide treats Crohn's disease of the ileum (the end of the small

intestine) and the beginning of the large bowel. BDP is only for UC and is taken together with a 5-ASA for a shorter time. These preparations have a special coating, so the drug can reach the targeted area of inflammation without first dissolving in the stomach. This means that there may be fewer side effects as less of the steroid enters the bloodstream to reach the rest of the body.<sup>2 3</sup> However, these drugs will have no effect on symptoms like inflammation of the joints, eyes and skin that sometimes accompany flare-ups of IBD.

Corticosteroids are not effective in preventing flare-ups, so are not used long-term as maintenance treatment. As you begin to feel well, you can gradually reduce the dose. Unfortunately, sometimes the symptoms return when you reduce the dose. If this keeps happening, immunosuppressant drugs (see page 11) are added to help you come off steroids completely.

It is essential to withdraw steroids slowly, especially when treatment has been for longer than a few weeks. This is because stopping corticosteroids abruptly may be dangerous. Corticosteroids are very similar to the hormone, cortisol, naturally produced by the body's adrenal glands. When you take corticosteroids your adrenal glands stop producing or slow down the production of cortisol. This is known as adrenal suppression. If you stop corticosteroid treatment abruptly, it may take some time before the adrenal glands start producing cortisol normally again. Lower levels of cortisol may mean that your body does not respond so well to stressful situations, such as during an illness or operation, causing nausea, fatigue and light-headedness. If you were unconscious or confused after an accident, you might not be able to tell the emergency services about your corticosteroid treatment. **It is important, therefore, to carry a card showing the dose of corticosteroids you are taking and the date treatment began.** Some people choose to wear a medical identity bracelet or necklace.

### What are the possible side-effects of corticosteroids?

Although steroids are naturally present in the body, the higher than normal doses needed to control inflammation can have unwanted effects on the body. While most people will experience some of these side-effects, which may be off-putting, it may be helpful to realise that they can be

lifesaving and very useful in controlling acute flare-ups. The unwanted effects usually disappear when the dose is reduced or stopped. The challenge is to get the greatest possible benefit, with the fewest side-effects and it is best to discuss this carefully with your doctor.

**Temporary side effects:**

- An increase in appetite, which can lead to weight gain.
- Some rounding (so called 'mooning') of the face.
- Growth of facial hair.
- Development or worsening of acne.
- An increase in blood sugar level.
- Retention of salt, which can lead to the swelling of legs or raised blood pressure.
- Mood changes – both euphoria and depression.
- Difficulty in sleeping.
- Weakening of body's resistance to infection.
- 'Buffalo hump' or fat in middle of upper back.

**Rarely:**

- Upper abdominal pain or burning-type discomfort below the breast bone.

**Long term side effects:**

- Thinning of the bone, muscles and skin.
- A tendency to bruise easily.
- Diabetes, due to the increased blood sugar.
- The natural production of hydrocortisone by the adrenal glands failing to start again when the external source is stopped (this may occur only after many months, or years, of treatment with corticosteroids).

**Rarely:**

- Glaucoma, cataracts

## How are immunosuppressants used in IBD?

Immunosuppressants are mainly used when corticosteroids and 5-ASAs have failed to control the inflammation or corticosteroids cannot be withdrawn without relapse. This means that a person taking an immunosuppressant can often reduce the dose of, or even stop, the steroid drug without worsening the inflammation. For that reason immunosuppressants are sometimes called 'steroid-sparing' drugs and taken as 'second line' treatment, which means they are not prescribed initially.

As their name suggests, these drugs suppress the immune system in some way. Some of these drugs were originally used to suppress the immune response in organ transplant patients to prevent rejection of the donor organ. Others have been found to suppress the immune response in other immune related conditions, such as rheumatoid arthritis. Immunossupressants reduce the effectiveness of the immune system, but not so much that the body cannot fight against infections. Nevertheless, if you are on immunossupressants you might be slightly more susceptible to infections, such as colds and flu. The Department of Health recommends you get a flu vaccination each year if you are on immunossupressants. You may also be susceptible to potentially severe infections such as chickenpox or shingles, measles and pneumococcal disease. If you are not already immune you can be vaccinated.

These drugs also increase the skin's sensitivity to sunlight, so it is best to use sunscreens and to avoid sunlamps or sun beds.

## Which immunossupressants are used?

As these drugs are chemically different, their uses and side effects are individual. The drugs include:

- azathioprine and 6-mercaptopurine
- ciclosporin
- tacrolimus
- methotrexate
- mycophenolate mofetil

### **Azathioprine and 6-mercaptopurine**

These two drugs are chemically closely related and have similar actions. Azathioprine is used more commonly in Britain and 6-mercaptopurine (6-MP) is more widely prescribed in the USA. These drugs, which are taken orally, act slowly over several months and it may be six to twelve weeks before you notice any benefit.

During the early weeks of treatment these drugs can cause nausea, or a flu-like illness with fever and general aches and pains. Sometimes there may be a sudden worsening of diarrhoea which can be difficult to tell apart from the illness itself. Less common side effects include inflammation of the liver, of the pancreas (pancreatitis), anaemia, an increased risk of infection and a tendency to bruise or bleed easily, due to the suppression of the normal bone marrow function. There is a slightly increased risk of developing lymphoma (a type of cancer affecting the lymph glands), but a recent extensive analysis of the research concluded that for most people taking these drugs the risk was very small and the potential benefits outweigh the risk.

Some centres offer a blood test before treatment to measure an enzyme called TPMT (Thiopurine Methyltransferase). This helps to predict who is more likely to suffer side effects, but as it does not identify all who may be affected, it is still important to be monitored regularly. At first you will need frequent blood tests usually weekly, gradually spreading to every three months for as long as you are on azathioprine or 6-MP.

For more information see our drug treatment information sheet: *Azathioprine and 6-Mercaptopurine*.

### **Ciclosporin**

Ciclosporin is used widely for preventing the body's rejection of organ transplants and it is also useful in various conditions which are caused by a reaction of the body against its own tissues.

In IBD, ciclosporin is generally used to treat severe Ulcerative Colitis and may help to avoid or

delay surgery to remove the large bowel. It is usually first given intravenously in hospital and may be continued orally under close medical supervision, generally for a short period of about 3 months.

Ciclosporin can cause a number of side effects including: nausea, headache, growth of hair on the face, tingling of the hands or feet, swollen gums, decreased kidney function (usually temporary) and a rise of blood pressure.

For more information see our drug treatment information sheet: *Ciclosporin*.

### **Tacrolimus**

Tacrolimus is similar in action to ciclosporin and can have similar side effects. It is not as commonly used for IBD in the UK as in Europe. Drug trials in the US and Japan suggest it may have an advantage over ciclosporin, as it can be taken orally from the beginning rather than intravenously, so avoiding a hospital stay. It may be useful in delaying the need for surgery in severe UC and Crohn's, so avoiding urgent operations with more potential for complications. As tacrolimus works quickly, usually in two to four weeks,<sup>4</sup> it may be taken with azathioprine until this slower acting drug can become effective.

Tacrolimus is also available as an ointment for topical treatment and may be helpful for Crohn's in the anal area and UC in the rectum.

### **Methotrexate**

Methotrexate is typically used to treat cancer, but it can also be effective in treating inflammatory conditions, such as rheumatoid arthritis. In IBD it is usually prescribed for people with Crohn's disease, who become dependent on steroids and do not respond to, or cannot tolerate treatment with azathioprine or 6-MP. Methotrexate can be taken as tablets or as intramuscular injections and must only be taken once weekly. It can take up to three months before you notice any improvement in your symptoms.

It is important to have blood tests to check the liver, kidney and blood counts before and during treatment, as methotrexate can affect these organs and, like azathioprine and 6-MP, can produce effects from suppressing the bone marrow function. The more common side effects are nausea, vomiting, diarrhoea and swollen, sore gums. **If you are a woman it is important not to become pregnant whilst taking methotrexate, as it can have serious effects on the unborn baby.**

For more information see our drug treatment information sheet: *Methotrexate*.

### **Mycophenolate mofetil**

Mycophenolate mofetil has been used for many years for cancer treatment and after organ transplant. More recently it has been used for people with IBD who cannot tolerate or do not respond to other immunosuppressants or biologics.<sup>5</sup> Some studies have found that it was effective in about two-thirds of people with IBD, but a recent study found it was less effective.<sup>6</sup> The possible-side effects are similar to those with methotrexate and you will need regular blood checks.

## **How are biologics used in IBD?**

Biologics are the newest group of drugs to be used in IBD. Unlike most medicines that are made from combining chemicals, biologics are made from human or animal proteins. They target specific chemicals involved in the body's immune response to infection or harmful substances, which are excessive or work inappropriately in people with IBD. They are only used for severe active disease after standard treatments have failed. The two licensed for use in the UK are infliximab and adalimumab. Another biologic, certolizumab pegol (Cimzia), currently approved in the US for Crohn's, has been found to be as safe and as effective as the two licensed drugs.<sup>7,8</sup> It is currently approved in the UK to treat severe arthritis.

### **Infliximab (Remicade)**

Infliximab is known as an anti-TNF (tumour necrosis factor). It targets TNF-alpha, a chemical in the blood produced to help fight infection. This is overproduced in IBD, causing ongoing inflammation.

In Crohn's Disease infliximab is used for severe flare-ups that do not respond to steroids or immunosuppressants. It is only prescribed for severe active Ulcerative Colitis that does not respond to ciclosporin. It is given by infusion intravenously (into a vein) in hospital. As this usually takes four to six hours, treatment is in a day clinic.

Infliximab is not recommended for people with heart failure, multiple sclerosis or Crohn's related abscesses. There is also the risk of reactivating old tuberculosis (TB). This can happen even if you were not aware of being exposed to TB, so it is important to have a chest x-ray before treatment.

Side effects can include nausea, headaches and potentially serious infections, and occasionally an allergic type reaction to the infusion. For more information see our drug treatment information sheet: *Infliximab*.

### **Adalimumab (Humira)**

Adalimumab is another, more recent, anti-TNF drug. It is only used for severe Crohn's Disease. This drug is injected subcutaneously (under the skin), so it is possible to take at home. A common side effect is pain at the injection site, sometimes with redness, itching and swelling. Other side effects are similar to those with infliximab and the same precautions as with infliximab apply to adalimumab.

For more information see our drug treatment information sheet: *Adalimumab*.

## **How are antibiotics used in IBD?**

Antibiotics kill or stop the growth of bacteria and treat infections. In Crohn's Disease they are used to treat bacterial growth in the small intestine, abscesses and fistulas (abnormal channels connecting the bowel to the skin or surrounding organs – see our leaflet: *Living with a Fistula*). They may also be used to suppress inflammation in the intestine itself. The normal colon contains millions of bacteria; in people with IBD the intestinal bacteria differs from healthy people.<sup>10</sup> If the intestine is already inflamed, the idea is that bacteria may trigger an immune response and

worsen the inflammation. The evidence for the effectiveness of antibiotics is inconsistent and one study suggests that the reason some people do not respond to treatment may be because the particular bacteria in their colon may be less responsive to antibiotics.<sup>11</sup>

Antibiotics are also used to decrease the risk of flare-ups after operations for Crohn's Disease and may be used in combination with azathioprine.

Research suggests that antibiotics are not effective in UC, except in severe cases when there is the risk of infection.<sup>12 13</sup>

## Which antibiotics are used?

### **Metronidazole**

This is the most commonly prescribed antibiotic for Crohn's Disease. It is typically used for treatment of an abscess or fistula around the anus (back passage). It is also used to treat active Crohn's and has been found to be as effective as sulfasalazine to treat Crohn's Colitis (Crohn's in the colon).<sup>14</sup> Metronidazole is usually taken as a tablet, but it can be taken as a suppository or be given by injection. Side-effects can include nausea, lack of appetite, a metallic taste in the mouth and a harmless darkening of the urine. It is best to avoid drinking alcohol while taking this drug and for at least two days following the last dose, as there can be an interaction.<sup>15</sup> Very occasionally, continued treatment of metronidazole over a period of many weeks or months can damage nerves in the hands or feet; this causes a tingling sensation, which can continue after stopping the drug, sometimes for up to two years.<sup>16</sup>

### **Ciprofloxacin**

Ciprofloxacin is also used for the treatment of Crohn's and has been found to be as effective as metronidazole, with fewer side effects.<sup>17 18</sup> It is normally taken as a tablet, but it can be given by injection. It can cause nausea, diarrhoea and skin rashes. Ciprofloxacin may cause sensitivity to sunlight, so it is important to protect yourself when you go outside and to avoid sunlamps and sun beds.

### **Rifaximin**

Rifaximin is an antibiotic often used to treat traveller's diarrhoea caused by certain bacteria, which are also found in the intestines of people with Crohn's.<sup>19</sup> It works differently from other antibiotics because it targets the intestines, passing through the stomach, without being absorbed into the bloodstream. This means there may be fewer side-effects as the drug does not reach the rest of the body. More recently it has been used for active Crohn's and some people have found it effective, but the research into its use for IBD is limited.<sup>20</sup>

### **Anti-mycobacterial (anti-tuberculous) therapy**

In recent years some researchers have investigated mycobacteria as a cause of Crohn's and used anti-mycobacterial (anti-tuberculous) treatment. Under the microscope, intestinal Crohn's Disease shows some similarities to intestinal tuberculosis. While mycobacteria (the same family of bacteria as tuberculosis) have been seen in the intestines of people with Crohn's, the evidence suggests it does not cause Crohn's. The largest controlled study of people with Crohn's taking a combination of the anti-tuberculous drugs, rifabutin, clarithromycin and clofazimine, found that despite some short-term benefit there was no long-term improvement.

## **What about symptomatic drugs?**

There are a number of drugs you can obtain, without a prescription, to relieve the symptoms of IBD, such as diarrhoea, constipation and pain. However, they do not reduce the inflammation which causes the symptoms and it is best to be careful about taking them, as they may make your IBD worse.

### **Antidiarrhoeals**

#### *Antimotility drugs*

Codeine phosphate, loperamide (Imodium, Arret), and diphenoxylate (Lomotil) are drugs which can improve the symptoms of diarrhoea by altering the motility (muscle activity) of the intestine to slow the movement of bowel contents. This means that constipation can be a side effect.

Sometimes these drugs can cause a mass of hard stools, which are difficult or painful to pass.

Other side effects occur more commonly with codeine than with the others. These include nausea and drowsiness, as well as a dependence on codeine if it is taken in relatively large doses for a prolonged period. If codeine is withdrawn abruptly, it can also cause a general feeling of being unwell or anxiety.

#### *Bile salt binders*

Bile salts are naturally released from the liver to help absorb food and then are normally reabsorbed in the ileum (the lower part of the small intestine). If you have Crohn's Disease and have had surgery to remove the ileum, then the bile salts pass into the large intestine and cause diarrhoea.

Cholestyramine (Questran) and colestipol (Colestid) absorb the bile salts, preventing them reaching the colon and causing diarrhoea. They come in the form of a powder that can be mixed with water, juice or soft food. As cholestyramine reduces the absorption of other drugs, you can reduce this risk by taking cholestyramine at least 3 hours after other medication, as well as 3 hours before further medication. A newer drug called **Colesevalam has recently become available, which is taken in tablet form for those who find it difficult to take the sachets.**

The possible side effects include indigestion, abdominal discomfort, nausea and constipation.

#### **Laxatives**

Laxatives help to relieve constipation. Osmotic laxatives, such as Movicol, are considered safer than other kinds, as they are slow acting and are not absorbed into the body. Movicol softens the stool by increasing the amount of water in the large bowel.

The possible side effects include flatulence and stomach cramps, especially at the start of treatment.

### **Bulking agents**

Isogel, Fybogel, Regulan and Normacol are brands of bulking agents, known as bulk-formers. They are not actually drugs, but are a type of fibre that absorbs water and can be used for both constipation and diarrhoea. The fibre in bulking agents is usually ispaghula or sterculia. When taken with plenty of water they swell up inside the bowel to soften hard stools or to thicken liquid stools, providing the bulk needed by the bowel wall to work normally.

Bulking agents are particularly helpful in treating diarrhoea if you have had surgery to remove your colon, in which your small intestine is then joined to your rectum (colectomy with ileo-rectal anastomosis). They can also be useful to soften the hard motions you can get with UC of the lower colon or of the rectum.

### **Anti-spasmodics**

Mebeverine (Colofac) and over-the-counter preparations, hyoscine butylbromide (Buscopan) and alverine citrate (Spasmonal), are commonly used anti-spasmodics for the relief of painful spasms in the gut often experienced by people with Irritable Bowel Syndrome (IBS). Some people with IBD can get IBS after a flare up. These drugs can help and are safe to take. Side effects may include drowsiness, a dry mouth and blurred vision.

### **Analgesics (painkillers)**

There are many painkillers available, but paracetamol in standard doses is the safest. Combinations of paracetamol with other pain-killing drugs may be more effective than paracetamol alone. There is, however, some evidence that paracetamol can make UC worse, so it should be used sparingly.

Non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen and diclofenac, can be very effective for pain in the joints and spine, which can affect some people with IBD. Unfortunately there is good evidence that they can make IBD symptoms worse or possibly trigger a flare up. For severe arthritis in IBD there is a special type of anti-inflammatory called a cox-2 inhibitor. It is best to discuss the potential benefits and risks of NSAIDs with your doctor, as most of them can upset the stomach and, in some cases, cause ulceration.

## What about pregnancy and breastfeeding?

In most cases, it is better to continue with medication when pregnant. This is because there is greater risk to the baby if the mother's disease is in an active phase, than there is from the baby receiving small quantities of drug through the placenta or in breast milk. However, methotrexate and mycophenolate mofetil must **not** be taken by men or women trying to conceive, or during pregnancy, because of the risk of birth defects.

For those on infliximab and adalimumab, doctors generally recommend that you and your partner avoid these drugs when trying to conceive, or if you are pregnant or breastfeeding, as there is limited information about their safety. However, a panel of medical experts from nine European countries recently agreed that infliximab is safe to use during the first three months of pregnancy. The general recommendation is for both men and women to use contraception for at least six months after receiving infliximab or adalimumab.

The antidiarrhoeals, diphenoxylate and loperamide, and the antispasmodic drugs are not recommended during pregnancy.

It is best to discuss your medication with your specialist before making any decisions. More information is available in our information sheet: *Pregnancy in IBD* and individual drug treatment leaflets.

## How safe are IBD drugs?

Before drugs are licensed in the UK, they go through rigorous research and clinical trials on thousands of people. This process can take many years. Drugs are licensed by the Government's Medicines and Healthcare products Regulatory Agency (MHRA). The MHRA gives permission and sets strict safety criteria for all clinical trials in the UK. The Agency demands high standards from medicines manufacturers and will only issue a licence when it is satisfied that a medicine meets the required safety and quality standards.

The MHRA continues to review the safety of drugs after licensing. As part of this process, it has introduced a Yellow Card scheme to encourage people to report any suspected side-effects from medicines. As a medicine becomes more widely used in the general population, other side-effects can appear. For further information see the website: [www.yellowcard.gov.uk](http://www.yellowcard.gov.uk) or call the Yellow Card hotline on freephone 0800 100 3352.

For more information on the regulation and monitoring of medicines see *Medicines & Medical Devices Regulation: What you need to know* available to download from the MHRA website at [www.mhra.gov.uk](http://www.mhra.gov.uk) or telephone 020 3080 6000 for a copy.

### **Can I take part in clinical trials?**

If you want to take part in a clinical trial, you usually have to be referred by your doctor. It is important that you discuss the potential benefits and risks with your specialist before making a decision. You can get more information about clinical trials and those specifically for IBD from the NHS Choices website: [www.nhs.uk/conditions/clinical-trials](http://www.nhs.uk/conditions/clinical-trials).

### **Who can I talk to about my treatment?**

Many hospitals have a specialist IBD Nurse who is available for information and support. It is helpful to build up a good relationship with your health team, so that you can ask freely about what your options are or talk about concerns you may have about your drug treatment. Talking openly about all your symptoms and how you feel helps them to understand your needs and to choose the right treatment. It is important to take the drugs as prescribed so that your doctor can judge reliably how they are working. You may be concerned about taking drugs continually and the possibility of side-effects. While it is important to be aware of side-effects when you begin a course of any new drug, the potential risk has to be weighed against the expected improvement in quality of life. Remember too that everybody is different and not everybody gets side-effects and that some side-effects are very rare. However, if you suspect that your body is reacting badly to a drug it is best to contact your healthcare team immediately.

You can also talk to your local pharmacist, who has professional knowledge and should also be able to answer any questions you have about drugs.

You can call NHS Direct or NHS 24 in Scotland to help with queries you may have about drugs. These services are available 24 hours a day all year round on 0845 4647 (England and Wales) or 08454 24 24 24 (Scotland).

### **Where can I get further information?**

All medicines come with a Patient Information Leaflet. These are produced by the manufacturer and approved by the MHRA and include information about all possible side-effects, not all of which are mentioned in this booklet. You can find details of companies that make prescription drugs at the Association of British Pharmaceutical Industry website: [www.abpi.org.uk](http://www.abpi.org.uk) or telephone: 0870 890 4333.

For details of companies that make over-the-counter drugs, that is, drugs you can buy without a prescription, you can go to the Proprietary Association of Great Britain (PAGB) website: [www.pagb.co.uk](http://www.pagb.co.uk) or telephone: 020 7242 8331.

Our following publications have further information about drugs:

- *Taking medicines for IBD* – including special precautions to take while on medication
- *Staying well with IBD* – including tips on how to remember to take your medicine
- *Travel and IBD* – including tips on travelling with medicines and taking medicines abroad

If you have any further questions or would like a copy of any of the publications mentioned, please contact our Information Line on 0845 130 2233 or email: [info@crohnsandcolitis.org.uk](mailto:info@crohnsandcolitis.org.uk). You can download the information sheets from our website: [www.crohnsandcolitis.org.uk](http://www.crohnsandcolitis.org.uk).

## Other Useful Organisations

Bladder and Bowel Foundation <a href="http://www.bladderandbowelfoundation.org">www.bladderandbowelfoundation.org</a>	0845 345 0165
Colostomy Association <a href="http://www.colostomyassociation.org.uk">www.colostomyassociation.org.uk</a>	0800 328 4257
Core – Fighting Gut and Liver Disease <a href="http://www.corecharity.org.uk">www.corecharity.org.uk</a>	Freepost LON4268, London NW1 0YT
Crohn's in Childhood Research Association <a href="http://www.cicra.org">www.cicra.org</a>	020 8949 6209
IA – The Ileostomy and Internal Pouch Support Group <a href="http://www.iasupport.org">www.iasupport.org</a>	0800 0184 724
National Osteoporosis Society <a href="http://www.nos.org.uk">www.nos.org.uk</a>	0845 450 0230
Steroid Aid Group	5 Wessex Court, Tennyson Road, Worthing, West Sussex BN11 4BP
The Gut Trust (for IBS support and advice) <a href="http://www.theguttrust.org">www.theguttrust.org</a>	0872 300 4537

**References**

- 1 Dignass A et al. *The second European evidence-based Consensus on the diagnosis and management of Crohn's disease: current management*. JCC 2010, 4, 28-62.
- 2 *Enteric-coated beclomethasone [sic] compared to prednisone in UC*. 360° Gastroenterology. Crohn's and Colitis UK March 2010 p 5.
- 3 *Oral formulations of budesonide for IBD*. 360° Gastroenterology. Crohn's and Colitis UK May 2009 p 7.
- 4 Ng SC & Kamm MA. *Therapeutic Strategies for the Management of Ulcerative Colitis*. Inflammatory Bowel Disease June 2009 15 (6) 935-950.
- 5 Hamlin PJ et al. *Mycophenolate mofetil therapy for refractory inflammatory bowel disease*. Inflammatory Bowel Diseases December 2007 Vol13 (12) 1488–1492.
- 6 *Only "small proportion" of mycophenolate mofetil patients respond to therapy*. 360° Gastroenterology. Crohn's and Colitis UK. February 2010 p 3.
- 7 Cross R. *Another Anti-TNF Therapy for Patients with Crohn's Disease*. Inflamm Bowel Dis Vol 14 (3) March 2008.
- 8 Hanauer SB *Positioning Biologic Agents in the Treatment of Crohn's Disease*. Inflamm Bowel Dis Vol 15 (10) October 2009 1570-1582.
- 9 *NICE deal gives NHS patients access to Cimzia*. 360° Gastroenterology. Crohn's and Colitis UK March 2010 p 9.
- 10 Othman M et al. *Alterations in Intestinal Microbial Flora and Human Disease*. Current Opinion in Gastroenterology 2008; 24 (1) 11-16.
- 11 Angelberger S et al *NOD2/CARD15 gene variants are linked to failure of antibiotic treatment in perianal fistulating Crohn's disease*. Am J Gastroenterol. 2008 May; 103 (5) 1197-202
- 12 Travis SPL et al. *European evidence-based Consensus on the management of ulcerative colitis: Current Management*. JCC March 2008 Vol 2 (1) 24-62.
- 13 Garud S & Peppercorn MA *Ulcerative Colitis: Current Treatment Strategies and Future Prospects*. Ther Adv Gastroenterol 2009; 2 (2) 99-108
- 14 Dignass et al. *Ibid*.
- 15 CCFA. *Antibiotics*. August 2008.
- 16 Sandborn WJ, Feagan BG & Lichtenstein GR *Medical management of mild to moderate Crohn's disease: evidence-based treatment algorithms for induction and maintenance of remission*. Alimentary Pharmacology & Therapeutics 2007, 26 987-1003.
- 17 Dignass et al. *Ibid*.
- 18 Sandborn WJ, Feagan BG & Lichtenstein GR. *Ibid*.
- 19 Prantera C et al *Antibiotic treatment of Crohn's disease: results of a multicentre, double blind, randomized, placebo-controlled trial with rifaximin*. Alimentary Pharmacology & Therapeutics 2006 Apr; 23 (8) 1117-25.
- 20 Shafran I & Burgunder P. *Adjunctive antibiotic therapy with rifaximin may help reduce Crohn's disease activity*. Dig Dis Sci Apr 2010 55 (4) 877-9.



**Crohn's and Colitis UK**

4 Beaumont House, Sutton Road, St. Albans, Hertfordshire AL1 5HH.

Information Service: 0845 130 2233  
Administration: 01727 830038  
Fax: 01727 862550  
Crohn's and Colitis Support: 0845 130 3344

Email: [info@crohnsandcolitis.org.uk](mailto:info@crohnsandcolitis.org.uk)

Website: [www.crohnsandcolitis.org.uk](http://www.crohnsandcolitis.org.uk)

Crohn's and Colitis UK is the working name for the National Association for Colitis and Crohn's Disease (NACC)  
Charity registered in England No. 1117148 and in Scotland No. SC038632  
A company limited by guarantee in England: Company number 5973370

© NACC 2011  
Drugs used in IBD Edition 4  
Last Review January 2011; Next Review 2013

