Disease-modifying Antirheumatic Drugs (DMARDs)

Disease-modifying antirheumatic drugs (DMARDs) are medicines that are normally prescribed as soon as rheumatoid arthritis (RA) is diagnosed, in order to reduce damage to the joints. Rarely, they can have serious side-effects affecting the blood, liver, or kidneys. DMARDs are usually taken for the rest of your life. Because they are taken for a long time you need to have regular blood tests, to see if the DMARDs are having any side-effects.

What are disease-modifying antirheumatic drugs?

Disease-modifying antirheumatic drugs (DMARDs) are a group of medicines that are used to ease the symptoms of rheumatoid arthritis (RA) and reduce the damaging effect of the disease on the joints. There are quite a few DMARDs available to treat RA. They include azathioprine, ciclosporin, penicillamine, hydroxychloroquine, leflumomide, methotrexate, mycophenolate mofetil (MMF), sodium aurothiomalate and sulfasalazine. They come in various different brand names.

There is a group of newer medicines called biological therapies which can also be used to treat RA. Like DMARDs they have a disease-modifying effect against RA and are sometimes called cytokine modulators or monoclonal antibodies. Biological therapies include adalimumab, certolizumab pegol, etanercept, golimumab, infliximab, anakinra, abatacept, rituximab and tocilizumab. Biological therapies are not discussed further in this leaflet. See separate leaflet called Biological Medicines for Rheumatoid Arthritis.

DMARDs are also used to treat other conditions - for example, chronic inflammatory skin or bowel disease. However, the rest of this leaflet is only about DMARDs when they are used to treat RA.

What is rheumatoid arthritis?

- Arthritis means inflammation of joints. Rheumatoid arthritis (RA) is a common form of arthritis. The main symptoms are pain and stiffness of affected joints.
- RA is thought to be an autoimmune disease. The immune system normally makes small proteins (antibodies) to attack bacteria, viruses, and other germs.
- In people with autoimmune diseases, the immune system makes antibodies against tissues of the body. It is not clear why this happens.
- In people with RA, antibodies are formed against the tissue that surrounds joints (the synovium). This causes inflammation in and around affected joints.
- Over time this can damage the joint, the cartilage, and parts of the bone near the joint.
- The most commonly affected joints are the small joints of the fingers, thumbs, wrists, feet and ankles.

For more information see separate leaflet called Rheumatoid Arthritis.

How do disease-modifying antirheumatic drugs work?

We are still not sure exactly how DMARDs work. But it is thought that they work by blocking the way inflammation develops in the joints, by blocking certain chemicals involved in the inflammation process.
When are disease-modifying antirheumatic drugs usually prescribed?

DMARDs are prescribed as soon as possible after RA has been diagnosed, by doctors who specialise in treating RA. Most people with RA have flare-ups followed by better spells. During these flare-ups some damage may be done to the joints. If DMARDs are taken in the early stages of RA they can prevent joint damage and help to slow down the progression of the disease.

Which disease-modifying antirheumatic drugs are usually prescribed?

Methotrexate is the DMARD often chosen for initial treatment. However, the choice of medicine will depend on many issues about you and your illness. Your specialist will discuss the choices, so you have the medicine best suited for you.

When choosing a DMARD your doctor will talk to you about the differences between them and look for any reasons why you may not be able to take one over another. Some people are only prescribed one DMARD; others try several before one or more can be found to suit. Your doctor will advise if it is better for you to take one or two DMARDs.

How well and quickly do disease-modifying antirheumatic drugs work?

It can take several weeks or months for DMARDs to ease the pain and inflammation caused by RA. Therefore, in addition, other medicines are normally advised for a time to help control symptoms until DMARDs start working. These may be steroid medicines, anti-inflammatory medicines and/or other painkillers.

Steroids, anti-inflammatory medicines and painkillers ease the pain and reduce inflammation of RA. Anti-inflammatory medicines and painkillers do not provide the benefits that DMARDs give of preventing joint damage and slowing down the disease progression. Steroids can prevent joint damage if they are given in low doses and taken over a long period of time. However, they are not usually prescribed this way anymore. If a DMARD does not work after six months then your doctor will normally change your treatment.

Methotrexate, sulfasalazine, intramuscular gold and penicillamine are all thought to work as well as each other. However, in general, methotrexate and sulfasalazine are better tolerated and have less serious side-effects.

What are the possible side-effects of disease-modifying antirheumatic drugs?

It is not possible to list all the adverse effects of each DMARD in this leaflet. However, as with all medicines, there are a number of side-effects that have been reported with each of the DMARDs, some of which are serious. Serious side-effects are rare, but include damage to the liver and blood-producing cells. For more detail see the information leaflet that came with your medicine.

You must talk to your doctor or pharmacist if you develop:

- A sore throat, unexplained bruising, or mouth ulcers (signs of a problem with your blood).

Also, you must talk to your doctor or pharmacist if you develop any of the following:

- A feeling of sickness (nausea).
- Being sick (vomiting).
- Tummy (abdominal) discomfort.
- Yellowing of your skin or the whites of your eyes (jaundice).
- Dark urine (signs of a problem with your liver).

Also, DMARDs sometimes react with other medicines that you may take. So, make sure your doctor knows of any other medicines that you are taking, including ones that you have bought rather than been prescribed.

See the leaflet that comes with your particular brand for a full list of possible side-effects and cautions.

How often should I have blood tests when taking a disease-modifying antirheumatic drug?

Because these medicines are usually taken for a long time and they can have serious side-effects, it is usual to have regular tests - usually blood tests - whilst you take them. The tests look for some possible side-effects before they become serious.

Before DMARDs are started

Blood tests are always taken before you start treatment with a DMARD. This is to see if your liver, kidneys and blood are normal. If there are any problems, your doctor will talk to you about this. Blood tests help your doctor decide which DMARD is best for you or if another type of treatment is better for you.

After DMARDs are started

In the first six months of treatment blood tests are taken often. How often you have a blood test depends upon which DMARD you are taking. Your doctor will advise. For example, at first it can be every two to four weeks. After six months, if you have no problems, blood tests may then be taken every three months.
What will happen if my blood tests are not normal?
If there is a problem with your blood test you will usually be asked to stop taking the DMARD. Your GP will need to discuss the results of your blood test with the specialist to see what treatment you may need. In most people, once the medicine is stopped the blood, liver or kidneys return to normal.

What is the usual length of treatment with disease-modifying antirheumatic drugs?
If DMARDs work well, it is usual to take one or more DMARDs for the rest of your life. When your RA is well controlled, your doctor may advise you to lower the dose (very slowly). This is in order for you to take the lowest dose and to keep the disease under control.

Can I buy disease-modifying antirheumatic drugs?
No. They are only available from your pharmacist, with a doctor’s prescription.

Who cannot take disease-modifying antirheumatic drugs?
It is not possible in this leaflet to list every type of condition or type of person who cannot take each DMARD. However, in general, doctors do not prescribe DMARDs if you:

- Are pregnant or breast-feeding.
- Have severe liver or kidney problems.
- Have a severe blood disorder.
- Have a serious infection.
- Have an immunodeficiency syndrome.

How to use the Yellow Card Scheme
If you think you have had a side-effect to one of your medicines you can report this on the Yellow Card Scheme. You can do this online at www.mhra.gov.uk/yellowcard.

The Yellow Card Scheme is used to make pharmacists, doctors and nurses aware of any new side-effects that medicines or any other healthcare products may have caused. If you wish to report a side-effect, you will need to provide basic information about:

- The side-effect.
- The name of the medicine which you think caused it.
- The person who had the side-effect.
- Your contact details as the reporter of the side-effect.

It is helpful if you have your medication - and/or the leaflet that came with it - with you while you fill out the report.

Further reading & references
- Rheumatoid arthritis in adults: management; NICE Clinical Guideline (February 2009)
- Management of early rheumatoid arthritis; Scottish Intercollegiate Guidelines Network - SIGN (February 2011)
- DMARDs; NICE CKS, July 2015 (UK access only)

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