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Drug Therapy

Version of 2016

7. Methotrexate

7.1 Description

Methotrexate is a drug that has been used in children suffering from a number of different paediatric rheumatic diseases for many years. It was initially developed as an anti-cancer drug because of its ability to slow down the rate of the cell division (proliferation).
Nevertheless, this effect is only significant in higher doses. At low intermittent doses used in rheumatic diseases, methotrexate reaches its anti-inflammatory effect through other mechanisms. When used at such small doses, the majority of the side effects seen with larger doses either do not occur or are easy to monitor and manage.

7.2 Dosage/modes of administration

Methotrexate is available in two main forms: tablets and injection liquid. It is given only once weekly, on the same day of the week. The usual dose is 10-15 mg per square meter per week (usually to a max 20 mg per week). Addition of folic or folinic acid 24 hours after MTX administration reduces the frequency of some side effects.
The route of administration, as well as the dose, is chosen by the physician according to the individual patient’s condition.
Tablets are better absorbed when taken before a meal and preferably with water. Injections can be administered just under the skin, similarly to insulin injections for diabetes, but can also be given into the muscle or very rarely into a vein.
Injections have the advantage of better absorption and usually less stomach upset. Methotrexate therapy is usually long-term up to several

years. Most physicians recommend treatment to continue for at least 6-12 months after disease control (remission) is achieved.

7.3 Side effects

Most children on methotrexate have very few side effects. They include nausea and stomach upset. These can be managed by taking the dose at night. A vitamin, folic acid, is often prescribed to prevent these side effects.

Sometimes using anti-sickness drugs before and after the methotrexate dose and/or changing to injectable form can help. Other side effects include mouth ulcers and less commonly skin rash. Cough and breathing problem are rare side effects in children. An effect on the number of blood cells, if present, is usually very mild. Long-term hepatic damage (liver fibrosis) appears to be very rare in children, because other hepatotoxic factors (toxic to the liver), such as alcohol consumption, are not present.

Methotrexate therapy is typically interrupted when liver enzymes increase and re-started when they fall back to normal. Regular blood tests are therefore needed during methotrexate therapy. The risk of infections is usually not increased in children treated with methotrexate.

If your child is a teenager, other considerations may become important. Alcohol intake should be strictly avoided, as it may increase the liver toxicity of methotrexate. Methotrexate may harm an unborn baby, so it is very important that contraceptive precautions are taken when a young person becomes sexually active.

7.4 Main paediatric rheumatic diseases indications

Juvenile idiopathic arthritis.
Juvenile dermatomyositis.
Juvenile systemic lupus erythematosus.
Localized scleroderma.