



Cyclosporine (Neoral, Sandimmune, Gengraf)

Description

Cyclosporine (*Neoral, Sandimmune, Gengraf*) is a potent immunosuppressant medication that is considered a disease modifying antirheumatic drug (DMARD) because it not only decreases the pain and swelling of arthritis but it may also prevent joint damage and reduce the risk of long term disability.

Uses

Cyclosporine, used originally to prevent the rejection of transplanted kidneys, continues to be recommended for a variety of organ transplants. However, it has proven effective in treating people with [rheumatoid arthritis](#) who have not responded well to other medications. It has also been used to treat those with other rheumatic conditions, inflammatory eye diseases and severe forms of psoriasis and other autoimmune skin disorders.

How it works

Cyclosporine inhibits a group of cells, known as T-lymphocytes, which are important in the immune system and contribute to the development of “autoimmune” diseases, such as [rheumatoid arthritis](#) and [lupus](#).

Dosing

The initial dose for cyclosporine is 2.5 milligrams per kilogram (mg/kg) of body weight per day, which is then increased depending on how effective and how well tolerated treatment is. Cyclosporine comes in 25 mg and 100 mg capsules, to be taken twice a day. The daily dose usually works out to 75 mg or 100 mg taken twice daily. Your physician may increase the dose to 4.5 mg/kg a day or higher in some situations.

Time to effect

Cyclosporine may take a week or more before having any effect on arthritis symptoms, and maximum benefits may not be noticed for three months.



Side effects

The most common and potentially serious side effects are high blood pressure and kidney problems. Both problems are more likely to occur in elderly people who take this medication. Approximately a quarter of patients taking cyclosporine for rheumatoid arthritis or other conditions develop mild to moderate high blood pressure. Approximately half of patients develop mild kidney problems while on this medication, and may need to adjust their dosage or discontinue the medication. Kidney function usually improves after stopping the medication. Because this medication affects the kidney, cyclosporine can cause [gout](#) in some individuals or worsen underlying gout in others.

Other commonly experienced side effects include headaches, nausea, vomiting, abdominal pain or dyspepsia, and swelling of the hands or feet. In addition, approximately 10 percent of patients taking cyclosporine may develop tremors, increased hair growth, muscle cramps, or numbness and tingling of the hands or feet (known as neuropathy). Some patients taking cyclosporine develop swelling of the gums. Brushing and flossing regularly may help to prevent this.

Points to remember

You should not take cyclosporine if you have high blood pressure, kidney problems or cancer. Patients taking cyclosporine for a kidney transplant seem to have a higher risk of developing some kinds of cancers including skin cancers and, therefore, should have regular skin exams. Be sure to talk with your doctor before receiving any vaccines or undergoing any surgeries while on cyclosporine. You should talk with your doctor about updating vaccines prior to starting cyclosporine.

Cyclosporine may increase the risk of some kinds of infections. Notify your doctor if you notice signs of an infection such as fevers.

If you are pregnant or are considering having a child, discuss this with your doctor before beginning medication. Cyclosporine can cause serious complications during pregnancy such as pre-eclampsia (the development of high blood pressure and fluid retention), also called toxemia of pregnancy, and pre-term labor. Although it is unclear if cyclosporine causes birth defects, this issue should be discussed with your doctor. Because cyclosporine passes into breast milk, you should not breast-feed while taking this medication.

Drug interactions

Cyclosporine interacts with many drugs. Be sure to tell your doctor about all of the medications you are taking, including over-the-counter drugs and natural remedies. The following partial list of medications may interfere with the effectiveness of cyclosporine or increase risk of side effects from either medication in combination:

Medications taken for the heart and blood pressure: diltiazem (*Cardizem, Tiazac*), nifedipine (*Cardene*), verapamil (*Calan, Covera-HS, Isoptin, Verelan*), and the “potassium sparing diuretics” amiloride (*Midamor*), spironolactone (*Aldactone*) or triamterene (*Dyrenium*)

Cholesterol lowering medications: lovastatin (*Mevacor*) and simvastatin (*Zocor*)

Antibiotics and antifungals: clarithromycin (*Biaxin*), erythromycin, nafcillin, fluconazole (*Diflucan*), itraconazole (*Sporanox*), ketoconazole (*Nizoral*), and rifampin (*Rifadin, Rimactane*)



Anti-seizure (anti-epileptic) medications: carbamazepine (*Tegretol*), phenobarbital (*Solfoton*), and phenytoin (*Dilantin*)

Antidepressants: nefazadone (*Serzone*) and the selective serotonin reuptake inhibitors (SSRIs) such as paroxetine (*Paxil*), fluoxetine (*Prozac*), and sertraline (*Zoloft*)

Human immunodeficiency virus (HIV) protease inhibitors : indinivir (*Crixivan*), saquinavir (*Fortovase*, *Invirase*), ritonavir (*Norvir*), and nelfinavir (*Viracept*)

Others: allopurinol (*Lopurin*, *Zyloprim*), bromocryptine (*Parlodel*), androgens (male hormones), estrogens (female hormones), danazol (*Danocrine*), metoclopramide (*Reglan*), methylprednisolone, octreotide, ticlopidine (*Ticlid*), cimetidine (*Tagamet*), methoxsalen (*Oxsoralen*), coal tar (*Balnetar*, *Zetar*), trioxsalen (*Trisoralen*)

Avoid eating grapefruit and drinking grapefruit juice while taking this medication as it can affect the level of cyclosporine in your body.

For more information

The American College of Rheumatology has compiled this list to give you a starting point for your own additional research. The ACR does not endorse or maintain these Web sites, and is not responsible for any information or claims provided on them. It is always best to talk with your rheumatologist for more information and before making any decisions about your care.

National Institutes of Health Medline Plus Cyclosporine link
<http://www.nlm.nih.gov/medlineplus/druginfo/meds/a601207.html>

Updated April 2012

Written by Michael Cannon, MD, and reviewed by the American College of Rheumatology Communications and Marketing Committee.

This patient fact sheet is provided for general education only. Individuals should consult a qualified health care provider for professional medical advice, diagnosis and treatment of a medical or health condition.

© 2012 American College of Rheumatology