

proved that joint damage and bony erosions start even before the symptoms have manifested and hence earlier the treatments better the results.

## UNDERSTANDING RHEUMATOID ARTHRITIS [RA]

### Vital notes:

- ✓ RA is a chronic debilitating joint disease that affects small joints of hands and foot.
- ✓ More common in females aged 20 to 50 years.
- ✓ It is not synonymous with Rheumatic Fever which occurs in children aged less than 15 years.
- ✓ It has got nothing to do with monthly Penicillin injections and checking ASO titre. Somebody on Penicillin injections or being checked for ASO titre should change the doctor immediately.
- ✓ Untreated disease may cause deformity of hands and foot causing deterioration of quality of life.
- ✓ Erosion of small joints along with loss of entire joint architecture is the basic disease process.
- ✓ Early morning stiffness of joints along with swelling of one or more small joints of hands is very characteristic.
- ✓ Treatment is done with Methotrexate, Hydroxychloroquine Sulfate, Sulfasalazine, Leflunomide and short courses of steroids.
- ✓ Difficult diseases are treated with costly injections called biologics.
- ✓ The motto of treatment is “ catch early, hit hard and achieve and maintain treatment goal “
- ✓ Lung and cardiac complications are common in long term disease.
- ✓ Rheumatologists but not the Orthopedicians nor neurologist are the best person to treat the disease.

In a full blown case of Rheumatoid arthritis the picture is very classical of a middle aged female presenting with pain and swelling of hand and foot joints along with early morning stiffness that responds to steroids brilliantly. Wrists and the knuckles are predominantly involved. Patients are unable to hold a pen or open the door or do cooking etc. Gripping the wrist firmly causes pain and the hand joints are warm.

In an advanced case of the disease we often find elderly people presenting with crooked hands with areas of permanent swelling and skin changes due to chronic friction. The skin fold may contract chronic fungal infections and the joints are swollen and painful.

A few other organs are damaged in silence and they create serious problem at the advanced stage of the disease. Lungs, Heart and Blood Vessels are frequently affected. There is accelerated cholesterol deposition in arteries of heart causing increased risk of heart attack and brain stroke. These patients frequently contract infections which are difficult to treat.

Involvement of spine or low back is uncommon. However, cervical spine or the neck region is the only part of the spine that may be affected in this disease.

### What is the difference between Rheumatic Fever & Rheumatoid Arthritis?

There is a heaven & hell difference between these two entities. Rheumatic Fever is a disease of childhood. It usually occurs in children aged less than 15 years and is characterised by excruciating pain, swelling and redness of one or more big joints of arms and legs that responds excellently to Aspirin. This disorder may cause cardiac problems and is the leading cause of Valvular Heart disease in India. It is often characterised by some skin rashes and rarely neurologic problems. The disease process, the causative agent and the clinical symptoms are completely different from that of Rheumatoid arthritis.

### Introduction:

Rheumatoid Arthritis is an autoimmune disease of mankind where the cells and molecules who are responsible for security of our body, misidentify the joint tissue as foreign substance and start destroying them similar to the way they usually do when a bacteria or virus enters the body. This misdirected attack towards our own body is called autoimmune phenomenon.

The worst affected parts of the body are the joints of hands and foot. These small joints that are responsible for performance of day to day activities like eating, holding, writing, typing, washing etc become painful and swollen causing stiffness and deformity. This results in poor quality of life and subsequent depression. Early diagnosis and continuous treatment with specific medicines is cornerstone of treatment.

### What are the symptoms?

Symptoms vary from person to person and also from early stage to late stage of the disease.

In early stage there may be mild pain and stiffness involving 1 to 4 small joints of the hands and feet with a typical pattern of stiffness of those joints after rising from bed. During this phase it is very difficult to diagnose the disease. But it is very important to catch the disease in this stage. Researchers have

### Why Penicillin injections are given on a monthly basis?

Patients of Rheumatic fever often suffer a damage to the valves of the heart during the attack of Rheumatic fever. This damaged valves are potential sites of infections that may develop in the later part of the life. This infection is called Infective Endocarditis and may cause serious complications if not addressed properly. Penicillin injections are given as a form of prevention of development of this infection and have got no relationship with the wellness or cure of the disease. People who are aged above 15 years and are being treated with penicillin for the first time for joint pain occurring in small joints of hands should immediately change their doctor and consult a rheumatologist.

### How is Rheumatoid Arthritis diagnosed?

Rheumatoid Arthritis is diagnosed by its classical symptoms and some laboratory investigations. To identify early rheumatoid cases we usually follow a scoring system which includes counting of number of joints involved, the duration of the symptoms, checking ESR and CRP in blood and looking for the positivity of Rheumatoid Factor and Anti CP Antibody. Patients with high values of Anti CP Antibody are very much likely to suffering from rheumatoid arthritis and also they are very much likely to suffer a aggressive disease course

are stopped then there are chances that the disease activity may worsen requiring more biologics or aggressive treatment with DMARDs.

#### Know the Medicines:

### METHOTREXATE

#### What is methotrexate?

Methotrexate interferes with the growth of certain cells of the body, especially cells that reproduce quickly, such as cancer cells, bone marrow cells, and skin cells.

Methotrexate is used to treat certain types of cancer of the breast, skin, head and neck, or lung. It is also used to treat severe psoriasis and rheumatoid arthritis.

#### Important information

- ✓ Methotrexate is usually taken once or twice per week and not every day. You must use the correct dose for your condition. Do not use methotrexate to treat psoriasis or rheumatoid arthritis if you have liver disease (especially if caused by alcoholism), or a blood cell or bone marrow disorder.
- ✓ Do not use methotrexate if you are pregnant or breast-feeding a baby.
- ✓ Methotrexate can lower blood cells that help your body fight infections and help your blood to clot. You may get an infection or bleed more easily. Call your doctor if you have unusual bruising or bleeding, or signs of infection (fever, chills, body aches).
- ✓ Methotrexate can cause serious or life-threatening side effects on your liver, lungs, or kidneys. Tell your doctor if you have upper stomach pain, loss of appetite, dark urine, clay-colored stools, jaundice (yellowing of the skin or eyes), dry cough, shortness of breath, blood in your urine, or little or no urinating.

#### Before taking this medicine

You should not use this medicine if you are allergic to methotrexate. Do not use methotrexate to treat psoriasis or rheumatoid arthritis if you have:

- alcoholism, cirrhosis, or other liver disease;
- a blood cell disorder such as anaemia (lack of red blood cells) or leucopenia (lack of white blood cells);
- a bone marrow disorder; or
- if you are breast-feeding a baby.

#### FDA pregnancy category X.

- ✓ Methotrexate can cause birth defects in an unborn baby. Do not use methotrexate to treat psoriasis or rheumatoid arthritis if you are pregnant. Tell your doctor right away if you become pregnant during treatment.
- ✓ You may need to have a negative pregnancy test before starting this treatment.
- ✓ Use birth control to prevent pregnancy while you are using methotrexate, whether you are a man or a woman. Methotrexate use by either parent may cause birth defects.
- ✓ If you are a man, use a condom to keep from causing a pregnancy while you are using methotrexate. Continue using condoms for at least 90 days after your treatment ends.

#### Methotrexate side effects

Get emergency medical help if you have any signs of an allergic reaction to methotrexate: hives; difficulty breathing; swelling of your face, lips, tongue, or throat.

Stop using methotrexate and call your doctor at once if you have:

- dry cough, shortness of breath;



#### Does each and every patient of rheumatoid arthritis develop crooked hands and foot?

No. Not all patients suffer from such a devastating complications. There are important characteristics which if present predict severe destructive disease. Females, Smokers, High values of Anti CCP or Rheumatoid Arthritis, Family History of Rheumatoid Arthritis, Early evidence of Joint destruction on X Ray are a few important features who will go forward to develop destructive disease.

#### How Rheumatoid Arthritis is treated?

Continuous Physical activity of the involved joints is the corner stone of treatment. More the joints are active, less the damage. Cessation of smoking is mandatory. Smokers tend to develop early joint destruction

Medicines that used in treating rheumatoid arthritis are together called Disease Modifying Anti Rheumatoid Drugs or DMARDs. Methotrexate, Hydroxychloroquine Sulfate, Sulfasalazine, Leflunomide are the principal DAMRDs. Of these, methotrexate is the backbone of therapy. Methotrexate is used on a once a weekly basis starting from a dose of 5 mg to 50mg/week and a weekly 5mg of Folic Acid supplement is given to neutralise the adverse effects of Methotrexate. The detail of the drugs is mentioned below.

#### Why I am being given Steroids?

Steroids are given for a short period of increased disease activity. In rheumatoid arthritis we do not prescribe steroids in a regular basis. It is often prescribed when the patient is put on the DMARDs for the first time and when there is break through pain or active disease during the treatment.

Steroids are used in low dose in a decreasing dosage pattern over weeks and usually are not continued more than a month.

#### What are Biologic agents? Why they are so costly?

Biologic agents are highly specific molecules who directly block the action of the culprit chemicals in our body that cause the joint destruction. They are highly researched molecule and is manufactured abroad. They are usually available in injection formats and have their own side effect profile which includes reactivation of Tuberculosis and other opportunistic infections. Usually patients are checked for latent Tuberculosis Infections, HIV, Hepatitis B and C before the treatment is started.

Biologics cause excellent response to the disease causing alleviation of pain and swelling and sense of well being but unfortunately they do not provide any cure. Hence, if biologics

- diarrhoea, vomiting, white patches or sores inside your mouth or on your lips;
- blood in your urine or stools;
- swelling, rapid weight gain, little or no urinating;
- seizure (convulsions);
- fever, chills, body aches, flu symptoms;
- pale skin, easy bruising, unusual bleeding, weakness, feeling light-headed or short of breath;
- **liver problems** - nausea, upper stomach pain, itching, tired feeling, loss of appetite, dark urine, clay-colored stools, jaundice (yellowing of the skin or eyes); or
- **severe skin reaction** - fever, sore throat, swelling in your face or tongue, burning in your eyes, skin pain, followed by a red or purple skin rash that spreads (especially in the face or upper body) and causes blistering and peeling.

Common methotrexate side effects may include:

- vomiting, upset stomach;
- headache, dizziness, tired feeling; or
- blurred vision.

#### **Usual Adult Dose for Psoriasis:**

Single Dose: 10 to 25 mg/week orally, IM, or IV until adequate response is achieved.

Divided Dose: 2.5 mg orally, IM, or IV every 12 hours for 3 doses once a week.

Maximum weekly dose: 30 mg.

#### **Usual Adult Dose for Rheumatoid Arthritis:**

Single dose: 7.5 mg orally weekly.

Divided dose: 2.5 mg orally every 12 hours for 3 doses once a week.

Maximum weekly dose: 50 mg.

#### **Usual Pediatric Dose for Dermatomyositis:**

15 to 20 mg/m<sup>2</sup> orally once weekly.

#### **Usual Pediatric Dose for Rheumatoid Arthritis:**

5 to 15 mg/m<sup>2</sup> IM or orally once weekly.

- blurred vision, light sensitivity, seeing halos around lights;
- pale skin, easy bruising or bleeding;
- confusion, unusual thoughts or behavior; or
- seizure (convulsions).

Less serious hydroxychloroquine side effects may include:

- headache, ringing in your ears, spinning sensation;
- nausea, vomiting, stomach pain;
- loss of appetite, weight loss;
- mood changes, feeling nervous or irritable;
- skin rash or itching; or
- hair loss.

#### **Hydroxychloroquine dosing information**

##### **Usual Adult Dose of Hydroxychloroquine for Rheumatoid Arthritis:**

Initial dose: 400 to 600 mg (310 to 465 mg base) orally once a day

Maintenance dose: 200 to 400 mg (155 to 310 mg base) orally once a day

Each dose should be taken with a meal or a glass of milk.

##### **Usual Adult Dose for Systemic Lupus Erythematosus:**

Discoid and systemic lupus erythematosus:

Initial dose: 400 mg (310 mg base) orally once or twice a day for several weeks or months, depending on patient response

Maintenance dose: 200 to 400 mg (155 to 310 mg base) orally once a day

Each dose should be taken with a meal or a glass of milk.

##### **Usual Pediatric Dose for Dermatomyositis:**

Case Review (n=25)

Juvenile Dermatomyositis (JDMS):

1.5 to 15 years: 7 mg/kg orally per day (added to first course treatment for JDMS if the patient presented with extensive skin rash and needed steroids in high doses)

Each dose should be taken with a meal or a glass of milk.

## **HYDROXYCHLOROQUINE**

### **What is hydroxychloroquine?**

Hydroxychloroquine is used to treat or prevent malaria, a disease caused by parasites that enter the body through the bite of a mosquito. Malaria is common in areas such as Africa, South America, and Southern Asia.

Hydroxychloroquine is also used to treat symptoms of rheumatoid arthritis and discoid or systemic lupus erythematosus.

Hydroxychloroquine may also be used for purposes not listed in this medication guide.

### **Hydroxychloroquine side effects**

Some people taking this medication over long periods of time or at high doses have developed irreversible damage to the retina of the eye. Stop taking hydroxychloroquine and call your doctor at once if you have trouble focusing, if you see light streaks or flashes in your vision, or if you notice any swelling or colour changes in your eyes.

Get emergency medical help if you have any of these signs of an allergic reaction to hydroxychloroquine: hives; difficulty breathing; swelling of your face, lips, tongue, or throat.

Call your doctor at once if you have a serious side effect such as:

- muscle weakness, twitching, or uncontrolled movement;
- loss of balance or coordination;

## **SULFASALAZINE**

### **What is Sulfasalazine?**

Sulfasalazine affects a substance in the body that causes inflammation, tissue damage, and diarrhoea.

Sulfasalazine is used to treat moderate to severe ulcerative colitis.

Sulfasalazine is also used to treat rheumatoid arthritis in children and adults who have used other arthritis medicines without successful treatment of symptoms.

Sulfasalazine may also be used for purposes not listed in this medication guide.

### **What is the most important information I should know about Sulfasalazine?**

You should not use Sulfasalazine if you have porphyria, a blockage in your bladder or intestines, or if you are allergic to sulpha drugs, aspirin, or similar medicines called salicylates.

### **FDA pregnancy category B**

Sulfasalazine is not expected to harm an unborn baby. However, you may need to take folic acid supplements if you take Sulfasalazine during pregnancy. Follow your doctor's instructions. Tell your doctor if you are pregnant or plan to become pregnant during treatment.

Sulfasalazine can pass into breast milk and may harm a nursing baby. Tell your doctor if you are breast-feeding a baby. Sulfasalazine should not be given to a child younger than 2 years old.

**If you are treating arthritis**, do not stop using any of your other arthritis medicines until your doctor tells you to. Your symptoms may not improve right away when you start taking Sulfasalazine, and you may still need your other medicines for awhile.

#### **Sulfasalazine side effects**

Get emergency medical help if you have any of these **signs of an allergic reaction**: hives; difficulty breathing; swelling of your face, lips, tongue, or throat.

Serious and sometimes fatal infections may occur during treatment with Sulfasalazine. **Stop using this medicine and call your doctor right away if you have signs of infection such as:**

- sudden weakness or ill feeling, fever, chills, cold or flu symptoms;
- sore throat, cough, trouble breathing;
- stabbing chest pain, cough with yellow or green mucus, wheezing;
- pain when swallowing, painful mouth sores, red or swollen gums;
- rapid heart rate, rapid and shallow breathing, fainting;
- skin sores, pale skin, easy bruising, unusual bleeding; or
- jaundice (yellowing of the skin or eyes).

Also call your doctor at once if you have:

- severe nausea or vomiting when you first start taking Sulfasalazine;
- the first sign of any skin rash, no matter how mild;
- signs of a kidney problem--little or no urinating; painful or difficult urination; swelling in your feet or ankles; feeling tired or short of breath; or
- severe skin reaction--fever, sore throat, swelling in your face or tongue, burning in your eyes, skin pain, followed by a red or purple skin rash that spreads (especially in the face or upper body) and causes blistering and peeling.

Common side effects may include:

- nausea, vomiting, upset stomach, loss of appetite;
- headache; or
- low sperm count in men.

#### **Sulfasalazine dosing information**

##### **Usual Adult Dose for Ulcerative Colitis -- Active:**

3 to 4 g/day orally in evenly divided doses

Comments:

-To reduce possible GI intolerance, a lower starting dose (e.g., 1 to 2 g/day) may be considered.

-If GI intolerance occurs after the first few doses, symptoms may be reduced by halving the daily dose and then increasing it gradually over several days; if intolerance continues, the drug should be stopped for 5 to 7 days then restarted at a lower daily dose.

-Increased toxicity risk should be considered if more than 4 g/day is needed to reach desired therapeutic effect.

-Clinical criteria, sigmoidoscopy, and biopsy samples should be evaluated to determine response of acute ulcerative colitis to drug therapy.

-When adequate improvement is confirmed by endoscopy, dose should be reduced to maintenance level; if diarrhoea recurs, dose should be increased to previously effective levels.

Uses: In the treatment of mild to moderate ulcerative colitis; as adjunctive therapy in severe ulcerative colitis

##### **Usual Adult Dose for Ulcerative Colitis -- Maintenance:**

2 g/day orally in evenly divided doses

Comments:

-Drug therapy often needs to be continued, even when clinical symptoms are controlled.

Use: To prolong the remission period between acute attacks of ulcerative colitis

##### **Usual Adult Dose for Rheumatoid Arthritis:**

Delayed-release tablets: 1000 mg orally twice a day

Suggested dosing regimen:

Week 1: 500 mg orally once a day in the evening

Week 2: 500 mg orally twice a day (morning and evening)

Week 3: 500 mg orally in the morning and 1000 mg in the evening

Week 4: 1000 mg orally twice a day (morning and evening)

Comments:

-To reduce possible GI intolerance, a lower starting dose (e.g., 0.5 to 1 g/day) is recommended; a suggested dosing regimen is provided above.

-Degree of improvement in number and extent of actively inflamed joints can be evaluated to determine efficacy of drug therapy.

-This drug does not produce an immediate response.

Concomitant analgesics and/or NSAIDs are recommended (at least until the effect of this drug is evident).

-Therapeutic response has been seen 4 weeks after starting therapy; 12 weeks of therapy may be needed before clinical benefit is noticed.

-Increasing the daily dose to 3 g/day may be considered if clinical response is inadequate after 12 weeks; careful monitoring suggested for doses over 2 g/day.

Use: In the treatment of patients with rheumatoid arthritis who responded inadequately to salicylates or other NSAIDs (e.g., insufficient therapeutic response to, or intolerance of, an adequate trial of full doses of 1 or more NSAIDs)

##### **Usual Adult Dose for Iritis:**

Study (n=10) - Acute anterior recurrent uveitis

Initial dose: 500 mg/day then increased by 500 mg/week

Maintenance dose: 1 g twice a day for 1 year; in cases of new flare, dose was increased by 500 mg/week up to 3 g/day

##### **Usual Pediatric Dose for Ulcerative Colitis:**

6 years or older:

Initial therapy: 40 to 60 mg/kg/day orally divided into 3 to 6 doses

Maintenance therapy: 30 mg/kg/day orally divided into 4 doses

Comments:

-If GI intolerance occurs after the first few doses, symptoms may be reduced by halving the daily dose and then increasing it gradually over several days; if intolerance continues, the drug should be stopped for 5 to 7 days then restarted at a lower daily dose.

-Clinical criteria, sigmoidoscopy, and biopsy samples should be evaluated to determine response of acute ulcerative colitis to drug therapy.

-When adequate improvement is confirmed by endoscopy, dose should be reduced to maintenance level; if diarrhoea recurs, dose should be increased to previously effective levels.

-Drug therapy often needs to be continued, even when clinical symptoms are controlled.

Uses: In the treatment of mild to moderate ulcerative colitis; as adjunctive therapy in severe ulcerative colitis; to prolong the remission period between acute attacks of ulcerative colitis

### Usual Pediatric Dose for Juvenile Rheumatoid Arthritis:

Delayed-release tablets:

6 years or older: 30 to 50 mg/kg/day orally in 2 equally divided doses

Maximum dose: 2 g/day (normally)

Comments:

-To reduce possible GI intolerance, dosing should be started at 1/4 to 1/3 the planned maintenance dose and increased weekly until maintenance dose is reached at 1 month.

Use: In the treatment of patients with polyarticular-course juvenile rheumatoid arthritis who responded inadequately to salicylates or other NSAIDs

## LEFLUNOMIDE

### What is Leflunomide?

Leflunomide affects the immune system and reduces swelling and inflammation in the body.

Leflunomide is used to treat the symptoms of rheumatoid arthritis. Leflunomide also helps reduce joint damage and improves physical functioning.

Leflunomide may also be used for other purposes not listed in this medication guide.

### What is the most important information I should know about Leflunomide?

- ✓ **Leflunomide can harm an unborn baby or cause birth defects. Do not use Leflunomide if you are pregnant.** Your doctor may want you to have a pregnancy test to make sure you are not pregnant before you start taking Leflunomide.
- ✓ Stop taking Leflunomide and tell your doctor right away if you become pregnant during treatment. You will need to receive medications to help your body eliminate the drug quickly and reduce the risk of harm to your unborn baby.
- ✓ Use effective birth control while you are taking Leflunomide, whether you are a man or a woman. After your treatment ends, continue using birth control until you have received the drug elimination medications.
- ✓ Before taking Leflunomide, tell your doctor if you have a history of liver disease or hepatitis, kidney disease, any type of infection, a history of tuberculosis, a blood cell disorder such as anaemia or low platelets, a bone marrow disorder, or if you are using any drugs that weaken your immune system (such as cancer medicine or steroids).
- ✓ Leflunomide can make it easier for you to get sick. Avoid being near people who have colds, the flu, or other contagious illnesses. Contact your doctor at once if you develop signs of infection.
- ✓ Do not receive a "live" vaccine while you are being treated with Leflunomide, and avoid coming into contact with anyone who has recently received a live vaccine. There is a chance that the virus could be passed on to you.
- ✓ After you stop taking Leflunomide, you may need to be treated with other medications to help your body eliminate Leflunomide quickly. Without receiving this drug elimination procedure, Leflunomide could stay in your body for up to 2 years. Follow your doctor's instructions.

### FDA pregnancy category X.

This medication can cause birth defects. **Do not use Leflunomide if you are pregnant.** Your doctor may want you to have a pregnancy test to make sure you are not pregnant before you start taking Leflunomide.

Stop taking Leflunomide if you miss a period, and tell your doctor right away if you become pregnant during treatment. If you become pregnant while taking Leflunomide, you will need to receive medications to help your body eliminate the drug quickly. This will reduce the risk of harm to your unborn baby. You will also need to go through this drug elimination procedure if you plan to become pregnant after you stop taking Leflunomide.

Use effective birth control while you are taking Leflunomide. After your treatment ends, continue using birth control until you have received the drug elimination medications.

If a man fathers a child during or after Leflunomide treatment, the baby may have birth defects. Use a condom to prevent pregnancy while you are taking Leflunomide. After your treatment ends, continue using condoms until you have received the medications to help your body eliminate Leflunomide.

It is not known whether Leflunomide passes into breast milk or if it could harm a nursing baby. Do not use this medication without telling your doctor if you are breast-feeding a baby.

### Leflunomide side effects

Get emergency medical help if you have any of these **signs of an allergic reaction**: hives; difficulty breathing; swelling of your face, lips, tongue, or throat.

Stop using Leflunomide and call your doctor at once if you have any of these serious side effects:

- fever, chills, body aches, flu symptoms;
- white patches or sores inside your mouth or on your lips;
- chest pain;
- chest pain, dry cough, wheezing, feeling short of breath (you may also have a fever);
- pain or burning when you urinate;
- pale skin, easy bruising or bleeding, unusual weakness;
- nausea, stomach pain, loss of appetite, itching, dark urine, clay-colored stools, jaundice (yellowing of the skin or eyes); or
- fever, sore throat, and headache with a severe blistering, peeling, and red skin rash.

Less serious side effects may include:

- mild stomach pain, diarrhoea, loss of appetite;
- weight loss;
- headache, dizziness;
- back pain;
- numbness or tingling;
- runny or stuffy nose, cold symptoms; or
- mild itching or skin rash.

### Leflunomide dosing information

#### Usual Adult Dose for Rheumatoid Arthritis:

Loading dose: 100 mg once daily for 3 days.

Maintenance: 10 to 20 mg daily.

## PREDNISOLONE

### What is prednisolone?

Prednisolone is a steroid. It prevents the release of substances in the body that cause inflammation.

Prednisolone is used to treat many different conditions such as allergic disorders, skin conditions, ulcerative colitis, arthritis, lupus, psoriasis, or breathing disorders.

Prednisolone may also be used for purposes not listed in this medication guide.

### FDA pregnancy category C.

It is not known whether prednisolone will harm an unborn baby. Tell your doctor if you are pregnant or plan to become pregnant while using this medication.

Prednisolone can pass into breast milk and may harm a nursing baby. Do not use this medication without telling your doctor if you are breast-feeding a baby.

Steroids can affect growth in children. Talk with your doctor if you think your child is not growing at a normal rate while using this medication.

#### **Prednisolone side effects**

Get emergency medical help if you have any of these **signs of an allergic reaction**: hives; difficult breathing; swelling of your face, lips, tongue, or throat.

Call your doctor at once if you have a serious side effect such as:

- problems with your vision;
- swelling, rapid weight gain, feeling short of breath;
- severe depression, unusual thoughts or behavior, seizure (convulsions);
- bloody or tarry stools, coughing up blood;
- pancreatitis (severe pain in your upper stomach spreading to your back, nausea and vomiting, fast heart rate);
- low potassium (confusion, uneven heart rate, extreme thirst, increased urination, leg discomfort, muscle weakness or limp feeling); or
- Dangerously high blood pressure (severe headache, blurred vision, buzzing in your ears, anxiety, confusion, chest pain, shortness of breath, uneven heartbeats, seizure).

Less serious side effects may include:

- sleep problems (insomnia), mood changes;
- acne, dry skin, thinning skin, bruising or discoloration;
- slow wound healing;
- increased sweating;
- headache, dizziness, spinning sensation;
- nausea, stomach pain, bloating; or
- Changes in the shape or location of body fat (especially in your arms, legs, face, neck, breasts, and waist).

#### **Prednisolone dosing information**

##### **Usual Adult Dose for Multiple Sclerosis:**

Tablets and syrup for acute exacerbations: 200 mg daily for one week followed by 80 mg every other day for 1 month.

##### **Usual Adult Dose for Bronchopulmonary Dysplasia:**

Tablets and syrup for acute exacerbations: 200 mg daily for one week followed by 80 mg every other day for 1 month.

##### **Usual Adult Dose for Anti-inflammatory:**

Sodium phosphate:

Oral: 5 to 60 mg per day in divided doses 1 to 4 times/day.

Intravenous or Intramuscular: 4 to 60 mg/day

For intraarticular, intralesional or soft tissue administration:

Large joints: 10 to 20 mg

Small joints: 4 to 5 mg

Bursae: 10 to 15 mg

Tendon sheaths: 2 to 5 mg

Soft tissue infiltration: 10 to 30 mg

Ganglia: 5 to 10 mg

Injectable suspension (tebutate) for intraarticular, intralesional or soft tissue administration:

Large joints: 20 to 30 mg (doses > 40 mg not recommended)

Small joints: 8 to 10 mg

Bursae: 20 to 30 mg

Tendon sheaths: 4 to 10 mg

Ganglia: 10 to 20 mg

Injectable suspension (acetate) for intraarticular, intralesional or soft tissue administration: 4 to 100 mg

Bursae: 10 to 15 mg

Tendon sheaths: 2 to 5 mg

Soft tissue infiltration: 10 to 30 mg

##### **Usual Pediatric Dose for Immunosuppression:**

Oral: 0.1 to 2 mg/kg/day in divided doses 1 to 4 times a day.

Intravenous: 0.1 to 2 mg/kg/day in divided doses 1 to 4 times a day.

##### **Usual Pediatric Dose for Asthma -- Acute:**

Oral: 1 to 2 mg/kg/day in divided doses 1 to 2 times a day for 3 to 5 days.

Intravenous: 2 to 4 mg/kg/day divided 3 or 4 times a day.

##### **Usual Pediatric Dose for Nephrotic Syndrome:**

First 3 episodes: Initial dose: 2 mg/kg/day (maximum dose 80 mg/day) until urine is free of protein for 3 consecutive days (maximum: 28 days); followed by 1 to 1.5 mg/kg/dose every other day for 4 weeks.

Frequent relapses or long-term maintenance dose: 0.5 to 1 mg/kg/dose given every other day for 3 to 6 months.

##### **Usual Pediatric Dose for Bronchopulmonary Dysplasia:**

2 mg/kg/day orally divided twice daily for 5 days, followed by 1 mg/kg/day once daily for 3 days, followed by 1 mg/kg/dose every other day for 3 doses.

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