PATIENT INFORMATION ON COMMONLY USED MEDICINAL DRUGS

Sponsored by

National Health Development Fund
Ministry of Health, Nutrition & Indigenous Medicine

Medicinal Drugs Committee
Sri Lanka Medical Association
2016

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ISBN 978 – 955 – 9386 – 33 – 9

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Preface

Rational use of western medicinal drugs

During the past several years many effective medicinal drugs were discovered. The availability of such medicines has revolutionized treatment and prevention of disease, alleviating symptoms as well as aid in diagnosis of some disease. It is also important to know that all drugs have side effects. Such effects are usually minor but occasionally they may be serious and rarely life-threatening.

Drugs are prescribed on the concept of benefit versus risk, which means that they are given if beneficial effects are greater than harmful effects. It is important for patients and the public to use medicinal drugs properly. Rational use means to use safe, effective medication appropriate to clinical needs at affordable prices. Using medicinal drugs according to the prescribed route of administration, dosing schedule for the appropriate duration is recommended. Inform your doctor and pharmacist if you are taking any other drugs or have a past history of allergy. Women must inform if they are pregnant or breast feeding, as taking some drugs in pregnancy or during breast feeding may harm the baby.

Medicinal Drugs Committee of the Sri Lanka Medical Association has published booklets to provide essential information to the public about drugs which are commonly used as well as other topics relevant for patient care. These booklets are written in Sinhala, Tamil and English and cover the following topics:

- Antipyretics in children
- Cough syrups in children
- Antibiotics
- Diabetes – insulin or tablets?
- Drugs in hypertension
- Management of heart pain (angina)
- Cholesterol and drugs to treat high blood cholesterol

- Blood thinners
- Inhaled medicines in asthma
- Non-steroidal anti-inflammatory drugs (NSAIDs)
- Oral contraceptive pill (OCP)
- Emergency contraceptive pill (ECP)
- Vitamins
- Household poisoning
- How can pharmacists help patients in the correct use of medicines?

Each topic was written by specialist doctors and a pharmacist after much discussion. The authors of articles and the members of our committee sincerely hope that the information provided would be useful in your daily lives.

Drugs are available as generics or brand preparations. There is only one generic name (medicinal name) for a drug, whereas there may be several brand names given by drug manufacturers. The active ingredient in generic and brand drugs is the same though the colour, shape and flavor may be different. Generic drugs are cheaper than brand drugs. We advise the public to take medicines according to a prescription written by a qualified doctor. If you do not understand the contents of a prescription, please ask your doctor and the pharmacist for clarification. You should also ask about the price of drugs.

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Chairperson

Medicinal Drugs Committee

Sri Lanka Medical Association

Antipyretics in children

Antipyretic drugs (drugs reducing fever) are commonly used in children. Paracetamol is a commonly used antipyretic and is the ***only drug*** recommended to control fever in Dengue and other viral fevers. There is a maximum recommended daily dose for paracetamol and such dose should not be exceeded. In children the dose is calculated according to the weight and not the age. It is important to ask your doctor whether your child has been prescribed paracetamol and if so, do not give any additional paracetamol. It is available mainly as tablets and syrup. Overdosing with these drugs can be harmful and may endanger life. Paracetamol when given in repeated doses may exceed the maximum recommended dose which is known to cause liver damage. Non-steroidal anti-intlammatory drugs (NSAIDs) such as aspirin, are not recommended. Rectal suppositories of NSAIDs are also not recommended to reduce fever. Fever is a normal response of the body to infections. It is not always essential to bring down a fever unless it is distressing or uncomfortable. Majority of simple fevers are due to viruses and are self-limiting. If the child's fever is accompanied by any of the following, medical advice should be sought.

- Newborn having fever
- Child on long term drugs
- Fever more than 3 days
- Severe ear ache
- Sore throat with change in voice and swallowing difficulty
- Passing dark urine
- Pain when passing urine
- Unbearable headache after fever subsides
- Localized abdominal pain with vomiting
- Painful limb or joint swelling
- Red patches in the skin
- Child becomes lifeless with cold and clammy extremities

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Cough syrups in children

In Sri Lanka there are cough suppressants, expectorants and combinations of suppressants and expectorants. The active chemical ingredients in cough suppressants include dextromethorphan, codeine, pholcodeine. Antihistamines are often added to these preparations. The active ingredients in cough expectorants include ambroxol, guaphenesine, ipecachuana, bromhexine, ammonium chloride. These ingredients can be found singly or in combination. A local herbal preparation contains pavatta and thalsukiri. A sub therapeutic dose of a bronchodilator such as salbutamol, terbutaline, theophylline is often added to cough syrups.

Cough is usually a symptom of an underlying disease of the respiratory tract such as bronchial asthma, gastro-oesophageal reflux, post nasal drip, lower or upper respiratory tract infections. The cause should be addressed before cough syrups are prescribed. There is little evidence of significant benefit from cough syrups. Cough suppressants may cause mucus retention in the respiratory tract. They also cause side effects such as sedation, irritability and hyperactivity. A serious problem identified with use of cough suppressants was abuse and dependence. Hence, cough suppressants are ***only*** available at Rajya Osusala outlets and pharmacies of private hospitals.

Dry irritating relentless cough in a child may disturb sleep. If a bout of cough comes on during a meal, food may be vomited. Cough can also cause disturbance in the classroom. Hence, cough suppressants may allay some of these problems to a certain extent. But, they should only be used under medical supervision and guidance.

Cough expectorants are claimed to promote expulsion of bronchial secretions and mucus. But, there is little scientific evidence to show that they are of significant value. There is no rationale in combining a cough suppressant with an expectorant, because they have opposing effects. Using an expectorant during the day and a suppressant during the night may be beneficial. Other remedies include throat lozenges

and bee's honey, which soothe an irritable throat and lessen cough. Warm drinks, menthol and peppermint are other remedies to reduce cough. To remove secretions steam inhalation followed by gentle chest physiotherapy is of use. The following are recommended:

- Cough suppressants should ***not*** be used in infants
- Do ***not*** take cough syrups without asking your doctor as they are classified as prescription only medicines

* ***Most cough syrups are not recommended for use in developed countries such as UK, USA, Australia, Canada as they have little benefit; they are also not used in some developing countries.***

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Antibiotics

Antibiotics are used mainly for treatment of infections caused by bacteria. They act either by stopping the multiplication of bacteria or killing bacteria. Hence, an adequate dose of antibiotics should be given at appropriate intervals to achieve this purpose.

It is important to use antibiotics only if they are necessary. They should ***not*** be used for treatment of ***viral infections*** such as common cold or viral diarrhoea. These are self-limiting and will not benefit by the use of antibiotics. Selection of antibiotics is based on how effective the drug is on a particular bacterium. Thus, they should only be used when prescribed by a doctor. Inappropriate use of antibiotics leads to the problem of antimicrobial resistance (AMR). As a result some antibiotics may become ineffective when used for certain bacterial infections. AMR is a global problem. To reduce resistance the following are recommended.

- Use antibiotics ***only*** if indicated; ***avoid*** self-medication
- Use the correct dose for the appropriate duration. Follow the doctor's advice about the correct dosage regimen
- Do not stop antibiotics early when you feel better; take the full course recommended
- Do not keep any remaining antibiotics at home and such antibiotics should not be given to any other person
- Look at the expiry date when purchasing
- Do not use antibiotics for prevention of bacterial infection except in specific instances to be decided by your doctor

Antibiotics such as penicillins are known to cause allergic or hypersensitivity reactions. These reactions could be either mild or severe. Mild reactions include itching, urticarial rash and swelling round the eyes. If an allergic reaction develops, ***stop*** the antibiotic immediately and consult your doctor. Severe reactions may be life threatening and need immediate treatment in hospital. Such reactions comprise difficulty in breathing, low blood pressure and the

patient may even collapse. Inform your doctor, if you have developed allergic reactions to penicillin or any other antibiotic earlier, so that an alternate antibiotic can be given. Ask your doctor about adverse effects and precautions.

Antibiotics are mainly given orally or by injection depending on the severity of the infection. For children, antibiotic suspensions are given. These are available as powder for reconstitution. Usually, pharmacists prepare the suspension. However, if the pharmacist does not prepare it, ask the pharmacist about the correct method of preparation and administration. Once reconstituted the suspension must be stored properly, ask for advice regarding storage from the pharmacist. Some antibiotics such as erythromycin and oral penicillin should be given before meals to increase absorption. Ask your doctor about administration of antibiotics in relation to meals. In pregnant women only some antibiotics are considered to be safe, whereas others may be harmful to the unborn child (fetus). Please obtain information from your doctor about the safety of antibiotics in pregnancy.

Examples of commonly used antibiotics include: amoxicillin, cloxacillin, benzylpenicillin, co-amoxiclav, erythromycin, ciprofloxacin, cefalexin, tetracycline

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Diabetes: insulin or tablets?

Diabetes mellitus is a disorder where blood glucose level rises due to either the quantitative or qualitative failure of insulin secretion or the inability of peripheral tissues to utilize insulin. Thus, in the former, commonly called type 1 diabetes, patient needs administration of insulin whereas in the latter, type 2 diabetes, oral drugs are given to lower blood sugar (glucose) levels. As the deficiency of insulin gets worse progressively, those who are initially controlled on oral drugs may need insulin. Also, during acute illness such as infection or surgery even those taking oral drugs may need insulin temporarily to tide over the acute crisis. In pregnant diabetics insulin is recommended.

In whatever form of diabetes, first step in the management is to always control the diet. Although, details of dietary control are beyond the scope of this article, it has to be stressed that all forms of refined sugar should be avoided. Recommend, complex carbohydrates such as unpolished rice, together with reduced fat intake. Amount of calories for a 24 hour period depends on the amount of physical activity the person undertakes.

Drugs effective in treating diabetes are of two main groups, insulin and oral hypoglycemic agents (OHAs). The doctor will prescribe the most appropriate drug to control diabetes.

The main aim of treatment is to maintain the blood sugar level as close as possible to the normal range. When blood sugar is controlled the patient is relieved of troublesome symptoms such as excessive thirst, passing excessive urine, and weight loss. Such adequate control is known to prevent long term life threatening complications such as kidney failure, loss of vision, heart attacks and strokes.

When blood sugar levels are reduced below the lower limit of the reference (normal) range, patients develop hypoglycaemia. Symptoms of hypoglycemia include increased sweating, increased hunger, feeling

of weakness and the patient may faint or even become unconscious. If hypoglycemia develops, ***immediately*** take either glucose or about one teaspoon of sugar with tea or coffee followed by a snack. Relatives are advised to seek urgent medical attention if patient becomes drowsy or unconscious. It is important to ***prevent*** hypoglycemia by taking meals at appropriate times, not missing or delaying meals and taking only the recommended dose of the drug.

Insulin therapy

Insulin is a protein which will be digested if taken by mouth. It is usually given by injection under the skin (subcutaneous). Depending on the source, it is labeled as human, bovine or porcine. There are short and rapid acting insulins which are given usually before every meal. Longer acting insulins may be given once or twice daily before the morning and evening meal. Combination of short and long acting insulins may be used to achieve adequate control of blood glucose. Occasionally those on OHAs may be given a dose of insulin at night to control night time blood glucose.

It is useful for patients on insulin to monitor their blood sugar at home. This is done with a glucometer, a simple device that tests a drop of blood, obtained by finger prick, on a strip of paper. As various brands of glucometers are available, make sure you choose one which has a regular supply of testing strips.

Following should be noted:

- Generally, insulin should be taken before meals
- Once insulin is injected, the meal should be taken within 15 to 30 minutes
- If the blood sugar levels are outside normal limits, the dose of insulin may be adjusted by the patients, provided they received instructions from the doctor on how this should be done

- Blood sugar level at a given time depends on the preceding dose of insulin; hence, fasting blood sugar level depends on the dose of insulin given the previous evening or night; lunch time or evening blood sugar depends on insulin given in the morning

Oral hypoglycaemic agents

There are several main groups which include:

- Biguanides: metformin
- Sulphonylureas: tolbutamide, glibenclamide, gliclazide, glipizide
- Glitazones: pioglitazone
- Alpha glucosidase inhibitors: acarbose

There are newer drugs such as gliptins (eg sitagliptin) which are not first line drugs.

Biguanides such as metformin are taken 15 to 30 minutes after a meal, acarbose is taken with the meal and all other drugs are taken before meals. All except metformin are given once or twice daily, usually before breakfast and dinner. Metformin is preferably taken after meals. Usually, the patient is started on a small dose. Depending on the blood sugar report, the dose is adjusted by the doctor.

Irrespective of insulin or tablets taken by mouth, the patient also needs to adhere to lifestyle modifications.

The quantity of the meal too cannot vary beyond limits. For instance, one cannot suddenly decide to have a light lunch and a heavy dinner. An excessive meal taken cannot be covered by taking a higher dose of an antidiabetic drug. However, if one has to undergo more exertion than usual, patient may have to take an extra quantity of food to cover such activity.

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Drugs in hypertension

Hypertension is a lifelong condition which in most patients is of unknown causation. Many patients have no symptoms and may remain undetected unless the blood pressure is checked routinely. Lifestyle modifications including weight reduction, regular exercise, taking a diet low in ***salt*** and fat, stopping smoking and learning to relax with adequate sleep are of great importance. In a few with mild hypertension, such changes alone may control the illness. Others will need lifelong treatment and monitoring to prevent the long term complications such as heart attacks, heart failure, strokes and kidney failure. Other risk factors contributing to these complications such as diabetes, hyperlipidaemia(high cholesterol, triglycerides) and smoking should be looked for and corrected. Further details on the above are beyond the scope of this article.

Drugs belonging to several groups are used in the treatment of hypertension. A patient may need one, two or occasionally more drugs, alone or in combination for adequate control. Which drug is selected to start with or to be added depends on patient's blood pressure and individual characteristics such as age and other concomitant disease. Side effects of drugs which can reduce the quality of life in patients, should be looked for during treatment and avoided where possible. Feeling giddy on standing (postural hypotension), impotence and lethargy are common to many of these drugs. Report side effects to the doctor so that a suitable alternative drug can be given.

Thiazide diuretics, beta blockers, antgiotensin converting enzyme (ACE) inhibitors, angiotensin receptor blockers (ARBs), and calcium channel blockers are often prescribed. In special situations and if the above drugs are unable to control hypertension, other drugs such as methyldopa, prazosin may be prescribed.

Thiazide diuretics are cheap, effective, first line drugs recommended for hypertension. They are preferred in the elderly with systolic hypertension. Its actions are slow and side effects generally mild.

However, rarely thiazides are known to increase blood glucose. Hydrochlorothiazide 25 mg daily in the morning is recommended. Side effects that inconvenience the patient are uncommon.

Beta blockers are second line drugs which are preferred in those with ischaemic heart disease. They are also beneficial in relieving migraine. However, in patients with heart failure and in those with bronchial asthma they are contraindicated. Common side effects include lethargy, aching muscles, pain in legs when walking and impotence.

ACE inhibitors are relatively free of side effects. However, a troublesome dry cough, occurring mainly at night, may necessitate the withdrawal of these drugs. ARBs are a related group of drugs which do not commonly cause cough.

Calcium channel blockers are potent antihypertensives with beneficial effects on the heart as well. They can cause swelling of legs. Such effect by itself is harmless but the drug may have to be stopped if the patient worries about the cosmetic effect.

In hypertension of pregnancy, the drugs recommended include methyldopa, calcium channel blockers, hydralazine. Thiazides, ACE inhibitors and ARBs are contraindicated. If a patient on an antihypertensive medication becomes pregnant, the doctor should be informed immediately. The doctor will then make necessary adjustments to the drug treatment. If there is renal impairment, inform doctor and appropriate drugs will be prescribed.

All drugs should be taken regularly without interruption. If there are side effects or inter current illness, patient must see the doctor early while continuing treatment. Sudden cessation of drugs can cause a sudden rise in blood pressure with disastrous complications such as stroke. Most drugs are available in once daily or combined formulations. Patient can specifically ask for them, if a dose in a multi dose regimen is missed or omitted.

At follow up visits if the blood pressure is found to be normal, that is an indication to continue and not to stop treatment. In a few instances, especially where significant life style modifications are achieved and maintained, initial drug therapy may be stopped by the doctor with no recurrence of hypertension. However, patients should have their blood pressure checked regularly.

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Management of heart pain (angina)

Heart pain or angina refers to chest pain which occurs due to a reduction in blood flow through the coronary arteries supplying blood to the heart. Obstruction occurs as a result of blockage of coronary arteries with plaques containing fatty substances such as cholesterol. Risk factors for angina include smoking, high blood pressure, hyperlipidaemia and diabetes mellitus. The chest pain of angina is generally described as tightening or gripping. It is usually brought on by exertion but may also occur at rest. Typically pain is in the central chest and may radiate to the jaw or the arm. Pain may be accompanied by sweating or shortness of breath.

An ECG may be normal or show transient changes during an attack. Treatment of angina includes management of acute anginal pain, long term management to prevent anginal attacks and reduce risk of further cardiovascular complications.

General management

Life style modifications are important and you have to stop smoking, reduce weight and carry out regular exercises. High blood pressure, diabetes and hyperlipidaemia should be treated.

Medical treatment

Glyceryltrinitrate is a short acting nitrate which is the recommended drug for relief of acute angina. Keep a tablet of glyceryltrinitrate under the tongue (sublingually) at the onset of chest pain. There is prompt relief in a few minutes. This drug can also be taken sublingually before performing exercise such as climbing steps which are known to bring on attacks of angina. The commonest adverse effect of glyceryltrinitrate is headache. If the headache is severe, it can be relieved by swallowing or spitting out the tablet. The action of the drug lasts for about 30 minutes and it can be taken again. However, if the chest pain is persistent and does not subside seek medical care ***immediately***.

Glyceryltrinitrate is an unstable drug which should be ***stored*** properly in brown coloured glass bottles without any cotton wool. Close the bottle tightly after opening it. This drug reacts with plastic, paper and cotton wool. So, if you wish to go on holiday take the glass bottle containing the tablets along with you. Do not put tablets into plastic containers or wrap them in paper. Discard the tablets eight weeks after opening the bottle.

If you develop frequent attacks of angina a beta-blocker (eg atenolol) is prescribed by the doctor. Beta-blockers should not be taken by asthmatic patients. If you have asthma alternate drugs such as calcium channel blockers (verapamil, diltiazem) are indicated. Long acting nitrates are also given on a regular basis along with glyceryltrinitrate which should be taken when necessary. Aspirin in low doses (75 mg) to prevent formation of clots inside blood vessels and statins to lower cholesterol are indicated on long term basis to prevent further cardiovascular complications. If you develop severe chest pain urgent treatment in hospital is mandatory, otherwise you may develop a heart attack. Future management may include surgical interventions such as coronary angioplasty or coronary artery by - pass grafting.

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Cholesterol and drugs to treat high blood cholesterol

What is cholesterol and what are the different types of cholesterol?

Cholesterol is a lipid (fat chemical) that is made in the liver from fatty foods that we eat. A certain amount of cholesterol is present in the bloodstream. You need some cholesterol to keep healthy. Cholesterol is carried in the blood as part of particles called lipoproteins. There are different types of lipoproteins, but the most relevant to cholesterol are:

- Low density lipoproteins carrying cholesterol – (LDL cholesterol); this is often referred to as 'bad cholesterol' as it is mainly involved in forming a cholesterol rich fatty deposit in blood vessel wall
- High density lipoproteins carrying cholesterol – (HDL cholesterol); this is often referred to as 'good cholesterol' as it may actually prevent fat deposition in blood vessels

Why is high cholesterol bad?

High cholesterol in blood can get deposited in blood vessel walls that supply blood to the major organs such as heart or brain resulting in poor blood circulation to these organs. At a site where cholesterol is deposited in a blood vessel, a blood clot can form which can give rise to a heart attack or a stroke. Such disease are known to be a main cause of hospital deaths in Sri Lanka.

Who should have blood cholesterol tested?

It is advisable for all persons aged 40 years or more, those of any age with a strong family history of early heart disease or stroke, and persons of any age with a family history of a hereditary lipid (cholesterol) disorder to have blood cholesterol tested. If you are found to have a high risk of developing heart disease or stroke, you will usually be advised to take drugs to lower your cholesterol and other lipids.

What factors affect the blood level of cholesterol?

In most people, cholesterol level reflects the amount of fat that you eat. However, different people who eat the same amount of fat can have different amounts of cholesterol. In general, if you eat less fat, your cholesterol level is likely to go down. In some, a high cholesterol level may be due to predisposing conditions. For example those having an underactive thyroid gland, persons who are obese or drink too much alcohol as well as those with rare kidney and liver disorders are likely to have raised blood cholesterol levels. In some, a very high level of cholesterol runs in the family due to an inherited genetic problem. One such problem is called Familial hypercholesterolaemia.

Do all people with a high cholesterol level need treatment?

Treatment is needed only for people at a high risk of developing a cardiovascular disease. They include:

- People at higher risk of cardiovascular disease due to presence of multiple risk factors or familial hypercholesterolaemia
- Patients with existing cardiovascular disease such as those who had a heart attack or gets angina
- Diabetes
- Those with kidney disorders

Can diet lower cholesterol level?

Changing from an unhealthy diet to a healthy diet can reduce cholesterol level. However, dietary changes alone rarely lower the cholesterol level adequately to alter the risk of cardiovascular disease from a high risk to a lower risk category.

What drugs are given to reduce cholesterol and how should they be taken?

A group of drugs called statins usually lowers blood cholesterol level. Drugs of this group include, atorvastatin, simvastatin, rosuvastatin available in several brand names. They work by blocking an enzyme (chemical) which is needed to make cholesterol in the liver. These drugs are taken once a day, ideally in the evening at about 5-6 pm. But, if you forget to take the drug at that time, take it later on at night.

Statins are usually well tolerated. Doctors will usually check your liver function after you started these drugs, as some patients can develop abnormalities of liver function. They can also cause muscle pain and if you experience any muscle or body pains, you must inform your doctor. Once treatment is started, your lipid profile will be repeated in about 2 months to check whether cholesterol level has reduced satisfactorily. If not, the dose may be increased. Rarely, additional drugs may be needed to reduce cholesterol if the level is very high. Once you achieve good control, doing regular cholesterol testing is not necessary.

Apart from drugs to reduce cholesterol, do I need any other treatment?

If you are at high risk of developing a cardiovascular disease, then following treatment may be given along with advice to tackle any lifestyle issues.

- Anti hypertensives are recommended if your blood pressure is raised
- A daily low dose of aspirin may be given depending on your age and other factors. Aspirin helps to prevent blood clots forming on patches of cholesterol deposits inside blood vessels
- Where relevant, the following will also help:
    - ⋆ stopping smoking

- ⋆ eating a healthy diet with higher fruit, vegetable, fish intake and reducing fatty food and salt intake
- ⋆ keeping your weight and waist to ideal levels
- ⋆ taking regular physical activity such as walking
- ⋆ reducing intake of alcohol if you have been drinking too much alcohol

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Blood thinners

What are blood thinners?

- A blood thinner is a medication to prevent formation of blood clots
- This medication is prescribed because you are at risk of developing blood clots due to your illness
- A blood thinner helps your blood to flow more easily and lowers risk of developing blood clots; blood clots can increase risk of heart attacks, strokes and other serious medical problems, leading to death
- They belong to a group of medicines known as anti-coagulants
- Warfarin is an example of an oral, commonly used blood thinner
- Blood thinners work well if used correctly
- This guide will help you to learn about your medications and understand how to use them correctly
- You and your doctors should work together as a team to use blood thinners appropriately

How to take the blood thinners?

- Always take blood thinner on time, as directed by your doctor
- Take drug every day at the same time
- Never skip a dose
- If you miss a dose on a particular day, take it as soon as you remember on that day; if you remember only the next day, take same dose as usual on that day
- ***Never*** take a ***double*** dose, even if you have missed a dose
- Keep note of any missed doses in a diary

At the pharmacy

- Check the medication dispensed by pharmacist
- Ensure that the pill is the same as the one you were using (name, colour, shape and size)
- If they are different, check with the pharmacist

Using other medicines with blood thinners

- Tell your doctor about all medications you are taking, before starting on blood thinners
- Inform doctor about all recent and previous prescriptions, over the counter medicines, including vitamins, herbal products
- If you seek treatment from another doctor, for a different illness, inform you are taking blood thinners
- Remember that other medicines can change the way blood thinners work and blood thinners can also change the way other medications work

Side effects

- Bleeding is the most common side effect; others are rare
- Stop treatment and seek medical advice ***immediately*** if following occur:
    - passing red or brown urine
    - stools that appear red or look like tar (black stools)
    - red or brown vomitus
    - severe and continuous bleeding from gums and nose
    - coughing blood
    - a serious fall, with trauma to head
    - other types of unusual, severe, continuous bleeding

Precautions

- Avoid getting injured
- Be careful when you use knives, scissors and razors or other sharp objects
- Avoid activities and sports that can cause injuries, especially contact sports

Food and blood thinners

- Certain foods can affect the action of blood thinners
- High amounts of vitamin K can affect action of warfarin

- Foods containing moderate to high levels of vitamin K such as cabbage, broccoli, lettuce, spinach, green leaves; you don't need to avoid consuming such foods, but ensure you consume only constant amounts
- Do not make any major changes to your diet without consulting your doctor

Monitoring treatment

- You need to take regular blood tests to monitor your treatment
- Blood tests will show your doctor how to adjust the dose of blood thinner
- If there is too much blood thinner in your body you can get bleeding
- If there is inadequate blood thinner in your body you can get blood clots
- PT/INR is the name of the standard blood test done to monitor treatment
- Get test done on the exact date as instructed by your doctor
- Come for regular clinic follow up with results of the above test
- Do ***not self-adjust*** drug doses, without instruction by your doctor; this can cause either bleeding or formation of clots

Pregnancy and blood thinners

- Tell your doctor if you are pregnant or planning to get pregnant
- Some blood thinners are known to cause birth defects or bleeding in the fetus
- If you are in the reproductive age, use an appropriate contraceptive method; discuss with your doctor about the most suitable contraceptive method for you

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Inhaled medicines in asthma

Asthma is a common lung disease affecting millions of people worldwide. It is caused by narrowing of airways (tubes) in the lungs. This narrowing is partially or completely reversible. Symptoms of asthma include wheezing, coughing, chest tightness, and shortness of breath. These symptoms tend to occur from time to time, and are related to the degree of airway narrowing in the lungs. Asthma can be treated successfully. This requires appropriate education about the disease as well as being an active player in managing it.

There are two categories of medicine effective for treating asthma, these are:

- ***Relievers*** which help to reduce symptoms during an attack
- ***Preventers*** (controller medications) which reduce number and severity of attacks

The preferred way to take both categories of medicines is by inhalation. Preventers may be given as tablets too, especially when the disease is severe. Inhalers deliver the drug directly to the lungs. Hence, only a small dose has to be given to relieve symptoms. Such dose will reduce the incidence of side effects that occur when preventers are given as tablets. Inhalers deliver drugs as aerosols (metered dose inhalers or MDIs) or dry powder (dry powder inhalers or DPIs). The type of inhaler that is best for an individual will be decided by the doctor in consultation with the patient. If a patient finds it difficult to use a given inhaler, this should be discussed with the doctor as the correct way of using inhalers is very important to get maximum benefit. A spacer device can be used for those who find it difficult to coordinate an MDI when breathing. ***Inhalers are not habit forming or addictive***. Inhalation is the best method for getting a safe amount of drug inside lungs.

Relievers (salbutamol, terbutaline) are bronchodilators. These act quickly by temporarily relaxing the muscles around the narrowed

airway. Such drugs should be taken only when there are symptoms and no benefit will be seen if they are taken on a regular basis.

Some may feel shaky, develop a rapid heart rate and may feel anxious after using a short-acting bronchodilator. These side effects usually become less noticeable over time. Relievers are most effective when taken at the onset of symptoms, especially before the asthma attack gets severe. They should not be continued if the symptoms do not improve and a doctor's advice should be sought.

Preventers (beclometasone, fluticasone, budenoside) should be taken by those who have frequent symptoms of asthma. Their effects take time to appear and will not provide relief of symptoms during an acute attack. Such drugs should be taken on a daily basis even if there are no symptoms on a given day. Regular use of these medicines reduces the number and severity of attacks. They should not be stopped suddenly without medical advice.

Some of the medicine delivered by inhalers can get deposited in the mouth and throat, causing dryness of throat or a hoarse voice. To prevent such problem, it is important to wash and rinse the mouth after each inhalation.

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Non-steroidal anti-inflammatory drugs (NSAIDs)

NSAIDs are commonly used world - wide to reduce pain and inflammation. Symptoms of inflammation include swelling, redness, warmth and pain associated with arthritis as well as musculoskeletal pain. Commonly used NSAIDs include diclofenac, ibuprofen, aspirin.

Choosing a NSAID

A wide variety is available and response to NSAIDs can vary between two people. Effectiveness, side effects and price determine which medication should be used. The best person to decide is your doctor aided by you.

How do NSAIDs work?

NSAIDs reduce pain and inflammation by inhibiting enzymes called cyclo-oxygenases. These enzymes are also involved in protecting the lining of the stomach and regulating blood flow to kidneys. Enzyme inhibition accounts for some of the harmful side effects known to occur with NSAIDs.

Dose of NSAID

Lower doses are adequate for most people to relieve pain. Drugs can be taken on a regular basis or when the pain occurs. Higher doses are needed to treat inflammation and must be taken on a regular basis for 2 to 4 weeks before benefit occurs. If the initial dose is inadequate your doctor may increase the dose of the same drug or change over to another NSAID. Patients taking one NSAID ***should never*** take a second NSAID at the same time for relief of pain or inflammation.

Taking NSAIDs

NSAIDs should ***always*** be taken after meals and never on an empty stomach. The risk of causing irritation to the stomach and bleeding from it are reduced when NSAIDs are taken with meals. NSAIDs should not be taken more frequently or for a longer period than they have been prescribed.

Side effects

Common side effects include:

- Gastrointestinal: when used short term may cause upper abdominal discomfort; with long term use, especially with higher doses can cause ulcers and bleeding from stomach
- Kidneys: even short term use can harm kidneys especially if there is existing kidney disease; and/or when taken together with other drugs known to be harmful to the kidneys
- Allergies: skin rashes, difficulty in breathing (bronchospasm) in susceptible individuals

If you developed any side effects previously with NSAIDs inform your doctor. This will ensure adequate protection.

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Oral contraceptive pills (OCPs)

What are OCPs (birth control pills)?

They contain a combination of oestrogen and progesterone. OCPs prevent the monthly release of the “egg"(ovum) from the ovaries and also change the lining of the uterus (womb) to prevent pregnancy. OCPs also increase thickness of mucus in the cervix (neck) of the uterus. They do not prevent the spread of human immunodeficiency virus (HIV), the virus that causes acquired immunodeficiency syndrome (AIDS) and other sexually transmitted diseases.

Before starting on the pill, ask your doctor or pharmacist to explain how OCPs should be taken. Be sure that you know which brand of OCPs you are using. Do not take more or less of it, take it more often, or take it for a longer time than prescribed by your doctor. For the success of the pill it is ***essential*** to take the pill every day as advised.

How do I take the pill?

OCPs are available usually in packets containing 28 tablets. 21 such tablets contain hormones (active pills) and the other 7 are non-hormonal (inactive pills). The inactive pills are of a different colour compared to active pills and may contain iron or vitamin. When starting, it is best to take the first pill in the packet on the first day of your period. Each pill should be taken once a day, at the same time, every day. If you start the pill on a day other than the first day of your period you need an additional contraceptive method such as using condoms for the first 7 days. You may get your menstrual period during the 7days that you are taking inactive pills. Always start a new packet the day after completing the last pack, regardless of your menstrual flow.

What if I miss one active pill?

If you have missed one active pill, take the missed pill as soon as possible and continue taking the remaining pills at the regular time each day.

What if I miss two or more pills?

If you have missed two or more active pills anywhere in the pack the pill may not work. Take the missed pill as soon as possible. Carry on taking the remainder of the pills in the packet as before. But, use non hormonal contraceptive device such as a condom for the next 7 days.

What are the common side effects and precautions?

Side effects

- Nausea, vomiting
- Breast tenderness
- Weight gain
- Mood changes
- Headaches
- Breakthrough bleeding or 'spotting'

These side effects are common during the first few months of starting the pill and usually improve after about 2 months. Forgetting a pill may also cause 'spotting'.

Precautions

- If side effects persist longer than 3 months consult a doctor
- If you develop severe vomiting and / or diarrhea, consult a doctor
- If you are prescribed anti-epileptics or other medications such as antibiotics, inform your doctor as effectiveness of the pill may be reduced

- If you need to be admitted to hospital for surgery, or you have an accident which affects movement of your legs, tell the doctor that you are taking the pill

If you become pregnant when taking the pill, there is hardly any risk of birth defects.

When should you consult a doctor immediately?

Consult a doctor if the following symptoms occur:

- Visual disturbances such as blurred vision, flashing lights
- Severe headache
- Unusual pain in calf or thigh
- Severe chest pain, shortness of breath or coughing blood
- Severe stomach pain

What if you want to become pregnant?

When you stop using the pill, fertility may return immediately or after a few months.

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Emergency contraceptive pill (ECP)

Emergency contraceptive pill ('morning after pill') prevents pregnancy occurring after unprotected intercourse. ECP contains levonorgestrel, a progesterone hormone

How does it act?

ECP acts by preventing or delaying the release of an ovum from a woman's ovary, preventing fertilization. It can also change the uterine lining so that a fertilized egg will not be able to implant.

ECP will not end an existing pregnancy and it ***does not*** work as an abortion pill.

How to take ECP?

1.5 mg (single pill) should be taken as soon as possible within 72 hours (3 days) after unprotected intercourse**.** Preferably take tablet soon after a meal. If vomiting occurs within 3 hours of taking the tablet take another pill. Do not take more than 2 doses.

When to use ECP?

- Following sexual intercourse, when contraceptive not used
- Following rape or sexual assault
- When there is contraceptive failure
- Incorrect use or failure of barrier methods such as condom, diaphragm or cap
- Failed coitus interruptus (ejaculation into vagina or to external genitalia)
- Miscalculation of the periodic abstinence method or failure to abstain during the fertile period
- Missing one or more oral contraceptive pills (OCP)
- When a person taking OCP has intercourse whilst taking a short course of antibiotics, or taking anti - epileptic medicines

What are the common adverse effects and precautions?

Side effects

- Nausea, vomiting
- Tiredness
- Stomach pain
- Dizziness
- Headache
- Menstrual changes such as irregular bleeding; (next period could occur early or late, could be lighter or heavier or may be the same)
- Breast pain

Precautions

- Consult doctor if a period is more than 2 weeks late, if it is unusual in any way or if there is any suspicion of pregnancy
- Consult doctor immediately if there is any pain in the lower part of your stomach

It is important to note that: ECPs are not 100 percent effective. ***Using a regular contraceptive method is the best way to prevent pregnancy***

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Vitamins

Vitamins are a group of substances essential for normal cell function, growth and development. There are two types of vitamins namely fat and water soluble, depending on properties of solubility. When you eat foods containing fat-soluble vitamins, the vitamins are stored in fat tissues in your body and in the liver. They are stored in body fat until your body needs them. Only the required amounts of water soluble vitamins are retained in the body. Excess of water soluble vitamins are excreted. Vitamins A, D, E and K are fat soluble, Vitamins B and C are water soluble.

A balanced diet contains vitamins in adequate amounts for a healthy individual. There is no need to take vitamin supplements in such circumstances. However, vitamin supplements are needed for individuals with increased requirements who are at risk of developing deficiencies. Such individuals include infants and young children, pre pregnant and pregnant women, elderly and those taking certain medications. Specific recommendations for each vitamin depend on age, gender, other factors such as pregnancy, convalescence.

Vitamins are prescribed by doctors for prevention and treatment of specific deficiency states where dietary intake is insufficient. Dose, frequency of intake and the duration will depend on requirements for each individual. Vitamins, particularly fat soluble ones should not be taken as dietary supplements unless recommended by your doctor. Exceeding the requirement of fat soluble vitamins ***may be*** harmful.

Vitamin A plays an important role in eyesight. In addition, it helps growth, and aids in maintaining healthy skin. Vitamin A is available by itself in preparations of halibut oil and as a combination of vitamin A and D capsules. In Sri Lanka, infants and postpartum mothers are routinely given Vitamin A mega doses to prevent deficiency.

Vitamin B is a combination of several compounds. It includes B1, B2, B6, B12 and folic acid. B vitamins are needed for metabolic activity,

and formation of red blood cells. Vitamin B is available as preparations of oral vitamin B complex as well as thiamine, pyridoxine, folic acid. Requirement depends on deficiency experienced by each person. Folic acid is needed for production of red blood cells. It is given as prophylaxis for pre pregnant women, school girls of reproductive age and pregnant mothers to prevent neural tube defects in the foetus. It is also used to treat a type of anaemia called megaloblastic anemia. Folic acid is available as 1mg tablets.

Vitamin C is required for maintaining body tissues such as gums and connective tissue. It is also needed for wound healing. The benefit of vitamin C in common cold is ***not*** proven. It is available as 100 mg, 500 mg tablets. Maximum daily dose needed is 100 mg except in scurvy, a rare disease.

Vitamin D is needed for development of strong bones and teeth. It helps the body to absorb calcium. Patients with intestinal malabsorption, chronic liver disease, kidney impairment may need high doses. There is little evidence that vitamin E is essential in adults. Daily requirement of vitamin E is not well defined. Vitamin K is given for patients at risk of bleeding, such as cirrhosis of the liver.

Many multivitamin preparations are available. The need for vitamin supplementation depends on the requirement of each individual. It is not advisable to use multivitamins daily without medical advice.

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Household poisoning

Poisoning is a major global health problem. In Sri Lanka most of the hospital admissions in adults are due to intentional self-poisoning. Intentional poisonings occur mainly due to inability to cope with stressful situations mostly in young adults. A substantial number of hospital admissions also occur following accidental poisoning in children. This article will focus on common household poisoning and the preventive measures that can be adopted to reduce the incidence of accidental poisonings.

Agents responsible for common household poisoning are mainly categorized into 3 groups: chemicals (pesticides and other chemicals), medicinal drugs and natural toxins (toxins from plants, microbials and fungi).

Prevention of poisoning

Pesticides

Poisoning incidents can be prevented if parents and caregivers remember to lock up products that could potentially harm children. Studies have shown that in households with children under the age of five, nearly half, store pesticides in an unlocked cabinet within reach of children.

Simple steps that can be taken at home to prevent poisoning:

- Read the label of the pesticide bottle
    - ⋆ pesticide labels provide instructions about proper handling, use, and application rates of the product, and precautions to protect people and the environment
    - ⋆ always adhere to instructions given when mixing, applying and storing pesticides

- Never leave containers unattended when using them
- Keep the container closed when not in use
- If available use child-resistant packages
- Never transfer pesticides to other containers; children may associate certain containers with food or drink
- Never store pesticides with food or drinks
- Remove children, pets and toys before applying pesticides (inside or outside the home); follow label directions to determine when children and pets can re-enter the area that has been treated

Other chemicals

Kerosene oil, disc batteries, household cleaning products, bleaching material, detergents, fabric softeners, air freshener, aftershave lotions, nail polish removers, shampoos should be kept safely and securely.

Medicinal drugs

- To prevent accidental overdose, medications, even over-the-counter pain relievers, cough and cold syrups, antihistamines and vitamins, must be kept in a safe, secure place
- Have a separate place to store medicines which can be kept under lock and key
- Do not leave tablets or syrups unattended on tables or kitchen tops where children have easy access
- Make sure elderly people understand how to take their medication and can recognize one medicine from another; provide some supervision for elderly when taking medication; pills can be sorted into small containers and labeled to show the time they are to be taken; the containers should be re-filled for a week at a time
- Common problem encountered in children is administration of repeated doses of paracetamol within short periods; paracetamol should always be given according to the weight as

specified in the label or prescription; it should ideally be given at 6 hourly intervals, but if the child gets high fever before 6 hours another dose of paracetamol can be given 4 hours after the previous dose; but the next dose should be delayed for 8 hours; a child should ***not*** be given more than 4 doses within 24 hours

Poisonous plants and seeds

Advise children not to eat unknown seeds, berries or leaves. Kaneru poisoning is a major problem in Sri Lanka. Kaneru or Yellow oleander is grown in home gardens in abundance in some parts of the country. All parts of the tree are poisonous. It is advisable not to grow Kaneru in your home garden.

If poisoning occurs what should be done?

Seeking medical advice is essential. Always refer to the product label and follow instructions. Inducing vomiting is not advisable unless instructions are stated in the lable of the container or as advised by a qualified medical officer.

Some products are irritant and can damage the mucosa of the mouth and the oesophagus. Aspiration to the lungs is also a possibility. Aspiration of chemicals for example kerosene oil can cause breathing problems and infection. If the person vomits, clear the airway. Wrap a cloth around your fingers before cleaning the mouth and throat.

If patient is unconscious keep the patient on the left side with head extended to prevent aspiration. Take him or her to hospital as soon as possible.

If a patient develops a fit:

- Try to prevent a fall by laying the person on the ground in a safe and clear area

- Loosen tight clothing, especially around the neck
- Turn the person on his or her side to prevent vomitus being inhaled into the lungs
- Stay with the person until he or she recovers, or until you have medical help

If the poison has spilled on the person's clothes, remove clothing and wash the skin with running water and soap.

In an inhalational poisoning, open windows and doors to remove the fumes. If you are to rescue the patient take several deep breaths of fresh air and then hold your breath as you go in. Hold a wet cloth over your nose and mouth. Do not light a match or use a lighter because some gases can catch fire. After rescuing the person from danger, check the person's airway, breathing, and pulse.

In a chemical eye injury, rinse the eyes thoroughly with clean lukewarm water or if available with normal saline. Seek medical advice promptly.

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How can pharmacists help patients in the correct use of medicines?

Pharmacists play an important role in the health care system. They sell medicines and also function as information providers. The patient and the public are also a part of this system every time a medication is used. The patient should double check that the suitable dose of a prescribed drug is taken at the proper time, in the correct manner for the recommended duration. To achieve this, the patient needs to know relevant information about the medicines given. The responsibility of the pharmacist is to provide such information and advice.

Information and advice to patients from the pharmacist

Patients should know the names of their prescription only medicines (POM) and over the counter (OTC) drugs. This will enable the patient to inform the doctor about the medicines taken. Therefore, pharmacists are required to write the name of each medicine on the label. Medicines should be used correctly to ensure the expected therapeutic effect. Pharmacist should write the directions for use on the label of the container. When receiving medicine, the patients should make sure that they understand the following:

* How much to take at one time?
* How many times a day?
* How long to take?
* How to take (with water, juice)?
* When to take (before or after meals, empty stomach or with food)?
* Whether alcohol, any other medicines, foods and/or activities should be avoided

POM and OTC medicines may interact with other drugs causing harmful effects. Certain foods or alcohol may also interact with drugs.

Medicines can cause side effects, but they may or may not be serious. Some can cause drowsiness and may affect activities such as driving. Pharmacist can help the patient to anticipate and understand such side effects and help to deal with them. If any serious or unexplained

side effect is experienced the patient should be advised to consult a doctor immediately. Patients should follow the dosage instructions recommended for using medicines. However, occasionally patients may forget to take the medicines. The decision to take a missed dose depends on the drug. It is recommended to get advice from the doctor or pharmacist beforehand so that the patient will not panic and take an extra dose.

Problems such as antimicrobial resistance, lack of effectiveness may result by not taking all medicines prescribed properly. Patients should also not continue medicines too long without the advice of the doctor, nor should they stop without completing the course. Some drugs can cause birth defects whereas others can pass through breast milk. Therefore, expectant and nursing mothers should get advice from the doctor and pharmacist before using any POM or OTC medicine.

Patients and public should seek advice / demonstration from the pharmacist when purchasing certain devices which are used to administer medicines (eg inhalers used in asthma, insulin pens used in diabetes). Some medicines have to be reconstituted with water before use, such as amoxicillin powder for oral suspension. Pharmacist should prepare it or explain to the patient how to do so. Medicines may lose their effectiveness if not stored correctly. Seek advice of the pharmacist on proper storage. Also check expiry date of the medicine before purchasing.

It is very important for patients and public to make sure that they get their medicines from a licensed pharmacy where a pharmacist is available.

Patients and the public must be aware that it is a legal requirement for the pharmacy to exhibit the pharmacy license issued by the Ministry of Health with the photograph of the pharmacist who is responsible for managing the pharmacy.

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Acknowledgements

- National Health Development Fund of the Ministry of Health, Nutrition & Indigenous Medicine for sponsoring printing of booklets
- All authors of articles
- Members of Medicinal Drugs Committee for reviewing articles
- Professor Shalini Sri Ranganathan, Dr R Jayanthakumar, Dr B Kumarendran, Dr Mythily Sivapathasuntharam and Academics, Department of Community Medicine, Faculty of Medicine, Jaffna for Tamil translation of articles
- Professor Chandanie Wanigatunge, Dr Pradeepa Jayawardane, Ms Chinta Abyawardana, Dr M H S Piumanthi and Dr Sandani Perera for Sinhala translation of articles
- SLMA Office staff, Ms Nirmala, Ms Chamika for secretarial assistance and Mr M Rajasingham and Ms Chathurani for coordinating activities related to printing of booklets
- MD Gunasena Printers for printing the booklets