SRI LANKA - 2013
WER

Hypercholesterolaemia

Introduction

Hypercholesterolaemia, or high cholesterol, occurs when there is too much cholesterol in the body. Cholesterol is a soft, waxy, fat-like substance that is a natural component of all the cells of the body. Body makes all the cholesterol it needs. Any added cholesterol, which comes from the food, can cause harm.

High cholesterol raises the risk for heart disease, heart attack and stroke. When there is too much cholesterol circulating in the blood, it can create deposits (called plaque) along the walls of arteries. Plaque can eventually narrow or block the flow of blood to the brain, heart and other organs. Blood cells that get caught on the plaque form clots, which can break loose and completely block blood flow through an artery, causing heart attack or stroke.

The normal range for total blood cholesterol is between 140 and 200 mg per decilitre (mg/dL) of blood (usually just expressed as a number). However, the total number doesn't tell the whole story: There are two types of cholesterol -- HDL (high density lipoproteins, or "good" cholesterol) and LDL (low density lipoproteins, or "bad" cholesterol). The amount of HDL relative to LDL is considered a more important indicator of your heart disease risk. There is a third kind of fatty material called triglycerides found in the blood. They also play a role (generally as triglyceride levels rise, "good" HDL cholesterol falls).

While heredity may be a factor for some people, the main culprits are lack of exercise and diets high in saturated fat. High cholesterol can be prevented, sometimes with lifestyle changes (diet and exercise) alone. If not, drug treatment has to be taken.

Signs and Symptoms

There usually aren't any symptoms of high cholesterol, especially at early stages. The only way of finding out is through a blood test.

Causes

In some cases, high cholesterol levels may be inherited the liver may make too much cholesterol, or the body may not remove LDL from blood as efficiently as normal. High cholesterol and elevated triglycerides can also be associated with other diseases, such as diabetes. But most often high cholesterol is caused by eating foods high in saturated fat and not getting enough exercise. High cholesterol is more common in people who are overweight or obese.

Risk Factors

Some factors increase a person's risk of having high cholesterol. While some of these cannot be changed, many can be. The most important risk factors for high cholesterol are:

- Being overweight or obese
- Eating a diet high in saturated fat and trans fatty acids (found in processed and fried foods)
- Not getting enough exercise
- Family history of heart disease
- High blood pressure
- Smoking
- Diabetes

Diagnosis

Most people don't have any symptoms of high cholesterol. A blood test is the only way to check levels of cholesterol in blood. It is usually done using fasting lipid profile (a test performed after fasting for 12 hours).

Although cholesterol levels above 200 are generally considered high, what's considered safe for each person depends on whether the persons concerned are at risk for, or have, heart disease.

Total cholesterol levels

- Desirable: Below 200 mg/dL
- Borderline high: 200 - 239

High: Above 240

Contents

LDL cholesterol levels

- Optimal for people with heart disease or who are at high risk: Below 70 mg/dL
- Optimal for people at risk of heart disease: Below 100
- Optimal: 100 - 129
- Borderline high: 130 - 159
High: 160 - 189

HDL cholesterol levels

- Poor: Below 40 mg/dL
- Acceptable: 40 - 59
Optimal: 60 or above

Triglyceride levels

- Optimal: Below 150 mg/dL
- Borderline high: 150 - 199
High: Above 200

A person having hypercholesterolemia should check blood cholesterol level every 2 - 6 months. Liver function tests should also be done if that person is on cholesterol-lowering medication.

Preventive Care

Most people can lower cholesterol levels by eating a well balanced diet, getting regular exercise and losing excess weight.

Diet

A healthy diet can help lose weight. Losing weight may help lower cholesterol levels. To eat a healthy diet,

- Cut down on saturated fats and trans fats (found in processed and fried foods). No more than 10% of the daily calories should come from saturated fat and trans fats should be avoided completely. Based on data from 4 studies, it is estimated that a 2% increase in energy intake from trans fats increases the incidence of heart disease by 23%. Choose unsaturated fats, such as olive oil and canola oil, instead.
- Eat whole grains (whole wheat bread and red rice etc)
- Eat more fruits and vegetables, which are high in fiber and can help lower cholesterol levels. Studies show that plant-based diets are associated with decreases in total cholesterol and LDL cholesterol of up to 15%.
- Limit cholesterol in the diet. The highest quantities are found in egg yolks, whole milk products and organ meats.
- Eat fish.
- Eat phytosterols and stanols found in nuts, seeds, vegetable oils and yogurt. Studies show that eating 2 - 3 grams of phytosterols daily reduces total cholesterol by up to 11% and LDL cholesterol by up to 15%.
- Increase the intake of high fiber foods, especially legumes, as well as fruits, vegetables and whole grains.

Very low-fat diets are not recommended anymore because new researches show that people benefit from unsaturated ("good") fats, such as those found in olive oil, avocados and nuts.

Restricting sodium (salt, including salt already added to food) to less than 2,400 mg per day has also proven beneficial.

The TLC (therapeutic lifestyle changes) diet is recommended for people who have high cholesterol. With the TLC diet, less than 7% of daily total calories should come from saturated fat, and only 25% - 35% of daily calories should come from fat, overall. Sodium should be limited to 2,400 mg per day.

The Mediterranean style diet concentrates on whole grains, fresh fruits and vegetables, fish, olive oil. This diet is not low fat. It is low in saturated fat but high in monounsaturated fat. This diet is naturally rich in fiber, antioxidants and omega-3 fatty acids. It appears to be heart healthy: In a long term study of 423 patients who had a heart attack, those who followed a Mediterranean style diet had a 50 - 70% lower risk of recurrent heart disease compared with people who received no special dietary counselling.

Losing Weight

Being overweight increases the risk of high cholesterol and heart disease. Even a 2.5 - 5 kilogram weight loss can lower LDL twice as much as diet alone. Weight loss often results in lower triglyceride levels and increased HDL, too. To maintain a healthy diet, a gradual, weekly weight loss of 250 gram to 500 gram should be aimed for.

Getting Exercise

Regular exercise both reduces the risk of death from heart disease and helps lower LDL cholesterol levels, especially when combined with a healthy diet. Just 30 minutes of moderate exercise 5 times per week can help lose weight or maintain a proper weight, reduce LDL and triglyceride levels and increase levels of HDL. Studies show that every 10 minutes of added exercise per session is associated with a 1.4 mg/dL increase in HDL cholesterol. Exercise may also lower blood pressure.

Treatment Approach

Lowering cholesterol level reduces risk of heart disease and stroke. Studies show that for every 1% reduction in cholesterol levels there is a 2% reduction in the rate of heart disease. People who already have heart disease or are at higher risk benefit most from lowering their cholesterol.

Changes in lifestyle -- improved diet, more exercise -- are the most effective means of both preventing and, in less severe cases, treating high LDL cholesterol levels. In addition to recommending lifestyle changes, physicians often prescribe specific cholesterol-lowering medications.

Medications

If LDL cholesterol remains high, after changing diet and exercise habits, medication may be prescribed to lower it.
Statins -- These are usually the drugs of choice as they are easy to take and have few interactions with other drugs. Side effects can include myositis (inflammation of the muscles), joint pain, stomach upset, and liver damage. People who are pregnant or have liver disease should not take statins. Statins include Simvastatin, Atorvastatin, Lovastatin, Pravastatin, Rosuvastatin, Fluvastatin etc.

Fibric acid derivatives -These medicines are effective at lowering triglyceride levels, and moderately effective at lowering LDL. Side effects include myositis, stomach upset, sun sensitivity, gallstones, irregular heartbeat and liver damage. Gemfibrozil and Fenofibrate are Fibric acid derivatives.

Niacin (nicotinic acid), Bile acid sequestrants and Cholesterol absorption inhibitors are also used.

Source

Hypercholesterolaemia, available from http://umm.edu/health/medical/altmed/condition/hypercholesterolemia

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Table 4: Selected notifiable diseases reported by Medical Officers of Health 03rd – 09st August 2013 (32nd Week)

RDHS	Dengue Fever A	B	Dysentery A	B	Encephaliti A	B	E Fever A	B	F Poisoning A	B	Leptospiros A	B	T Fever A	B	V Hepatitis A	B	H Rabies A	B	Chickenpox A	B	Meningitis A	B	Leishmaniasis A	B	WRCD % T*	C**
Colombo	180	6135	2	137	0	13	4	95	0	36	1	144	1	6	0	0	0	0	3	282	1	33	0	0	69	31
Gampaha	39	2382	5	126	0	11	0	32	1	25	4	239	0	12	0	0	0	0	3	115	0	67	0	5	87	13
Kalutara	37	1158	6	117	1	17	0	57	0	13	3	264	0	2	0	0	0	0	7	192	1	50	0	0	77	23
Kandy	42	1244	4	99	0	7	0	15	0	7	2	54	2	82	0	0	0	0	0	89	0	10	0	2	83	17
Matale	6	325	3	69	0	4	2	17	0	3	0	49	1	4	0	0	0	0	2	35	0	26	0	6	77	23
NuwaraEliya	6	175	0	111	0	2	2	8	1	4	0	21	0	54	0	0	0	0	10	75	1	10	0	0	77	23
Galle	16	589	2	74	0	12	0	3	0	79	3	150	1	35	0	0	0	1	5	218	1	40	0	0	84	16
Hambantota	6	224	0	34	0	3	0	10	7	29	0	148	0	53	0	0	0	0	0	76	3	29	4	215	83	17
Matara	6	354	2	62	0	9	0	19	0	27	0	115	6	53	0	2	0	2	7	195	2	55	3	61	100	0
Jaffna	9	521	7	161	2	7	1	279	0	83	0	7	1	326	0	1	0	1	2	122	2	45	0	0	92	8
Kilinochchi	6	45	0	14	0	0	0	9	0	5	0	9	0	16	0	0	0	0	0	2	0	7	0	6	75	25
Mannar	0	57	1	35	0	1	2	57	0	14	0	11	1	18	0	0	0	0	0	11	0	4	0	1	100	0
Vavuniya	1	57	0	35	0	11	0	8	0	13	0	48	0	2	0	0	0	2	1	20	0	26	0	7	75	25
Mullaitivu	3	97	0	11	0	1	0	7	0	34	1	34	0	6	0	2	0	2	0	7	0	4	0	10	60	40
Batticaloa	4	458	4	203	0	4	0	3	0	14	1	29	0	2	0	3	0	3	0	29	0	7	0	0	100	0
Ampara	4	116	3	81	0	0	0	4	0	6	2	26	0	1	0	0	0	0	2	60	0	11	0	1	57	43
Trincomalee	0	167	0	48	0	3	1	5	0	1	1	57	0	7	0	1	0	1	0	32	0	4	0	26	58	42
Kurunegala	25	2248	3	122	1	27	1	30	5	21	3	209	1	25	0	1	0	1	5	263	2	89	0	34	85	15
Puttalam	14	694	1	51	0	4	0	15	0	35	2	27	0	12	0	0	0	0	0	61	0	20	0	7	54	46
Anuradhapura	3	389	1	67	0	13	0	3	1	30	0	285	1	18	0	1	0	1	3	125	0	80	5	263	68	32
Polonnaruwa	12	282	1	50	0	1	0	13	0	53	1	143	0	3	0	0	0	1	2	110	0	16	6	107	57	43
Badulla	7	352	2	123	0	3	0	12	0	8	1	40	1	58	0	0	0	0	1	90	1	51	0	4	65	35
Monaragala	2	171	2	83	0	3	3	19	0	20	0	182	2	37	0	0	0	1	0	39	0	18	0	9	91	9
Ratnapura	25	1388	7	271	0	80	0	34	0	16	4	251	1	36	0	1	0	1	5	117	0	59	0	8	67	33
Kegalle	25	784	5	91	0	11	1	18	0	8	4	139	2	62	0	0	0	0	4	224	1	83	0	0	82	18
Kalmune	0	481	3	111	0	1	0	3	5	78	0	6	0	2	0	0	0	0	0	62	0	8	0	1	62	38
SRI LANKA	478	20893	64	2386	04	248	15	775	20	662	33	2687	21	932	00	17	00	17	62	2651	15	852	18	773	77	23

Source: Weekly Returns of Communicable Diseases (WRCD).
*T=Timeliness refers to returns received on or before 09th August , 2013 Total number of reporting units 339. Number of reporting units data provided for the current week:261 C** Completeness
A = Cases reported during the current week. B = Cumulative cases for the year.**H Rabies**= Human Rabies, **E Fever**=Enteric Fever, **F Poison*** =Food Poisoning, **T Fever***=Typhus Fever, **V Hepatitis***=Viral Hepatitis

Table 1: Vaccine-Preventable Diseases & AFP

03rd – 09st August 2013 (32nd Week)

Disease	No. of Cases by Province									Number of cases during current week in 2013	Number of cases during same week in 2012	Total number of cases to date in 2013	Total number of cases to date in 2012	Difference between the number of cases to date in 2013 & 2012
	W	**C**	**S**	**N**	**E**	**NW**	**NC**	**U**	**Sab**					
AFP*	00	00	00	00	00	00	00	00	01	01	02	56	50	+ 12.0 %
Diphtheria	00	00	00	00	00	00	00	00	00	-	-	-	-	-
Mumps	05	01	02	03	06	01	04	00	03	26	57	1020	9224	- 88.9 %
Measles	46	04	16	01	06	01	05	03	40	122	00	1966	32	+ 6012.5 %
Rubella	01	00	00	00	00	00	00	00	00	00	-	13	-	-
CRS**	00	00	00	00	00	00	00	00	00	00	-	06	-	-
Tetanus	00	00	00	00	00	00	00	00	00	00	00	12	08	+ 50.0 %
Neonatal Teta- nus	00	00	00	00	00	00	00	00	00	00	-	00	-	-
Japanese En- cephalitis	00	00	00	00	00	00	00	00	00	00	-	64	-	-
Whooping Cough	02	00	00	00	00	00	00	00	00	02	02	58	51	+ 13.7 %
Tuberculosis	01	41	26	13	04	68	04	13	01	171	198	5206	5673	- 08.2 %

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

RDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna,
                  KN: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam,
                  AP: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS =**Congenital Rubella Syndrome

AFP and all clinically confirmed Vaccine Preventable Diseases except Tuberculosis and Mumps should be investigated by the MOH

Dengue Prevention and Control Health Messages

To prevent dengue, remove mosquito breeding places in and around your home, workplace or school once a week.

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ON STATE SERVICE

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