

# DYSLIPIDEMIAS IN THE PRACTICE OF THE FAMILY DOCTORS

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**Abstract:** Today, the cardiovascular disease represents one of the main causes of mortality in the world. The cardiovascular risk is defined as the totality of actions of the factors that produce and accelerate the evolution of the cardiovascular atherosclerosis. Dyslipidemias are considered one of the main risk factors taking into consideration the changes occurred in the diet of the patients and the fact that we are confronting with an aging population. The role of the doctor is to discover, diagnose, assess and monitor the therapy of the patient with dyslipidemia.

**Keywords:** cardiovascular disease, dyslipidemia, family doctor

**Rezumat:** Boala cardiovasculară reprezintă actualmente una dintre principalele cauze ale mortalității în lume. Riscul cardiovascular este definit ca fiind totalitatea acțiunii factorilor ce produc și accelerează evoluția bolii cardiovasculare aterosclerotice. Dislipidemiile sunt considerate unul dintre factorii de risc majori, având în vedere modificările din alimentația pacientului și faptul că ne confruntăm cu o populație în curs de îmbătrânire. Rolul medicului din asistența primară este unul de prim ordin în depistarea, diagnosticarea, evaluarea și monitorizarea terapiei pacientului cu dislipidemie.

**Cuvinte cheie:** boală cardiovasculară, dislipidemie, medic de familie

## INTRODUCTION

Dyslipidemias are affections that involve an alteration of the lipoproteins metabolism, brought about by a quantity of food containing excessive saturated lipids or by endogenous alterations producing very low density lipoproteins (VLDL) rich in TG.

In dyslipidemias with increased values of cholesterol associated to atherosclerosis or to the cardiovascular disease, it is very important to know the value of LDL – low density lipoproteins – cholesterol the part which has an antiatherogen effect in the clinical practice.

The increased value of HDL cholesterol and the low values of HDL cholesterol are involved in the mechanism of producing the coronary disease, peripheral arteriopathy, IMA etc.

The normal or increased values of HDL cholesterol and LDL cholesterol are presented in the table below:

**Table 1. ATP III classification of LDL cholesterol and HDL cholesterol.**

<b>LDL cholesterol</b>	
< 100	Best
100 – 129	Normal
130 – 159	Increased to the limit
160 – 189	Increased
>= 190	Very increased
<b>Total Cholesterol</b>	
< 200	Normal
200 – 239	Increased to the limit
<b>HDL cholesterol</b>	
< 40	Low
>= 60	Increased

The factors responsible for the increased values of cholesterol and of its alterations may or may not be controlled.

The risk factors that cannot be controlled include:

- Sex: the LDL cholesterol increases during the menopause and increases the risk for cardiac disease.
- Age: the risk increases along with the age. The men above 45 years old and the women above 55 years old register an increased risk for hypercholesterolemia.
- Family history: if the person's father or a brother suffered from a cardiac disease before 55 years old or if his mother or a sister suffered from a cardiac disease before the age of 65.

The controllable risk factors include:

- Diet: the saturated fats and the cholesterol from food increase the LDL cholesterol.
- Weight: obesity involves high levels of LDL cholesterol and low levels of HDL cholesterol.
- Physical exercises: decrease the LDL cholesterol and increase the HDL cholesterol. They also maintain an appropriate body weight.

It was proved that an increase of 1% of the total cholesterol will increase the risk of mortality with 1-1,5% through a cardiac disease.

The speed of the process of atherogenesis depends on the level in which the cholesterol LDL is taken away from the artery through the role played by the HDL cholesterol particles. If there is no equilibrium between the HDL cholesterol and the LDL cholesterol, this can lead to atherosclerosis of the vessels.

Smokers: HTA ( TA  $\geq$  140/190 mmHG ) or under hypotension medication; HDL – cholesterol low ( $<$  40 mg/dl ); Family history (CI to masculine relatives' age  $<$  55 years old), (CI to feminine relatives' age  $<$  65 years old); Age (men  $\geq$  45 years old; women  $\geq$  55 years old); Diabetes is a risk factor; HDL cholesterol  $\geq$ 60 mg/dl is a negative risk factor

If the HDL cholesterol is low, the TG might be increased. The mechanisms of cholesterol dependence take into consideration the fact that VLDL is high and leads to the increase of the risk of atherosclerosis.

The increase of triglyceride leads to the increase of the production of the hepatic factors of coagulation and to a high risk of thrombosis.

Normal values of triglycerides:  $<$  150mg/dl;m Increased to the limit: 150 – 199 mg/dl; High:  $\geq$ 200 mg/dl;

A value higher than 500mg/dl does not lead to atherosclerosis but it increases the risk of pancreatitis.

The treatment for normalizing the fats reconsidered the maintenance of HDL cholesterol together with the serous normalization of the TG as a secondary objective of the treatment.

### THE CONTROL OF DISLIPIDEMIA

The cardiovascular risk is in close relation with the increased levels of LDL cholesterol, TG cholesterol and the decrease of HDL cholesterol.

In association with a cardiac disease, or dislipidemia, the control of fats is very important in the management of the cardiovascular disease. The control of fats includes:

- screening and diagnosing the dislipidemia;
- evaluating the risk of cardiovascular disease;
- clinical management with the optimization of the lifestyle, medical education, medication, psychosocial support.

### The screening of dislipidemia and its diagnosis:

According to the recommendations of the guide for preventing the cardiovascular disease, the opinions concerning the parameters with reduced cardiovascular risk are: LDL – cholesterol  $<$  100 mg/dl; Triglycerides  $<$  50 mg/dl; Total cholesterol  $<$  200 mg/dl;

The action for detecting the dislipidemia problems is focused on the groups with high risk according to Euro 98.

The diagnosis of dislipidemia is valid if at least one of the following changes is present at two consecutive measurements: total cholesterol  $\geq$  200 mg/dl, triglycerides  $>$  150mg/dl, HDL cholesterol  $\leq$  40 mg/dl, LDL cholesterol  $\geq$  130 mg/dl.

The additional strategies include the alteration of the food diet with loosing weight. Loosing weight may be achieved with physical exercises and diet. The diet has to

be individualized, according to the daily needs of the patient, his food preferences, his availability and the socio-economic level.

A decrease with 5-10% of the weight is recommended in 3-6 months, in the case of an overweight patient. The type of fats consumed is also important: saturated, monosaturated, omega 3 and omega 6 pufa.

### Type of fats consumed and their sources.

- Saturated fats - Meat, milk products, vegetable oil, hydrogenate
- Monosaturated fats - Olives oil, canola oil
- Omega 3 oil - Fat fish
- Omega 6 oi - Maize oil, sunflower oil

### Evaluation of cardiovascular risk. Clinical management.

Changing the lifestyle (normal diet, the fats will be limited to maximum 20% from the total daily calories); Increase of physical effort; Weight loss where is needed; Reducing the saturated fats below 7%; Quit smoking is of major importance. After give up smoke, the risk of cardiac disease decreases with 50% in the first year.

### The forms of fats from food

It is recommended for the patients with risk for cardiac diseases to eat daily 20g of fats containing 6 up to 10g omega 3 oils and omega 6 oils in equal proportions, while the presence of the saturates fats should be less or equal to  $<$  2g.

Pharmacotherapy: statins, ezetimibes, resins, fibrates, omega 3 oils.

Statins are very efficient in reducing the total LDL cholesterol and the triglycerides. Statins have also pleiotropic effects with a positive effect on the endothelial dysfunction which stabilizes the atherosclerosis plaque.

These effects are indirectly accomplished through the normalization of the values of cholesterol and have to be taken into consideration when prescribing the medication for the dislipidemic patients.

In unusual doses, statins decrease the total cholesterol with 20-30% and LDL cholesterol with 25-40%. The decrease is larger if the dose is much increased. Triglycerides may be reduced with 0-20% and HDL cholesterol may increase with 5-10%.

Today, 6 statins are used: lovastatin, pravastatin, simvastatin (simcar, simgal, simvacard, vasilip, zeplin) administrated 10-40mg daily. Torvastatin administrated in daily doses of 10-20mg. Fluvastatin - 20-40 mg daily. Rosuvastatinum - 5-20 mg/dl daily.

Resins have been used for a long time in the treatment of dislipidemia. Resins increase HDL cholesterol and do not change the level of triglycerides. Resins are considered as primary agents in the treatment of the patients with high level of LDL cholesterol and normal level of triglycerides.

Medication: Cholestyramin is administered in daily doses of 4-16g. Colesevelam in daily doses of 2,6 – 3,8% (cp 625mg). Colestipolum - 5-20mg daily; Niacinum (Nicotinic acid):

- decreases LDL cholesterol;
- increases HDL cholesterol;
- decreases triglycerides.

**Combined therapy:** the combination between resins and statins is very efficient in the treatment of the high values of LDL cholesterol. For the patients who receive cyclosporine or niacinum at the same time with statins, the maximum dose will be of 10mg of simvastatin.

The fibrates activate the lipoprotein decreasing the level of triglycerides. Due to the decrease of triglycerides at the same time with the increase of HDL cholesterol and the decrease of LDL, the fibrates are recommended as a second therapeutic objective in the treatment of dyslipidemia.

Fibrates used: Fenox, Lipanthyl, Lipivim, Lipotib, Tricor (cp 100mg) 160mg daily during the meals.

Choosing the monotherapy or the combined therapy is conditioned by this clinical case.

In mixed hyperlipidemias, it is recommended to associate statins with niacin ezetimibes and fibrates.

The monitoring of lipids will be made from the beginning of the therapy, at 4-6 weeks until the therapeutic objectives are achieved and 3-4 months after, in the stage of maintaining the therapy.

### **The psychosocial support:**

It is based on:

- self respect;
- stress;
- depression which can become a risk factor for cardiac diseases.

## CONCLUSIONS

Because dyslipidemia is a risk factor for cardiovascular diseases, the diagnosis and its aggressive treatment are imperious in the primary care assistance.

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