The Journal Of The International Federation Of Clinical Chemistry And Laboratory Medicine

eJIFCC

How to Cite this article: 1. Atherosclerosis and Cerebrovascular Diseases http://www.ifcc.org/ejifcc/vol15no3/150309200403.htm

2.ATHEROSCLEROSIS AND CEREBROVASCULAR DISEASES

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2.1 Summary

Experimental and epidemiological studies indicated that a genetic-environmental or more particularly genetic-nutritional interaction was involved in the pathogenesis of hypertension and stroke. While hypercholesterolaemia is the major risk for atherogenesis and myocardial infarction, hypertension and thrombosis are the major risks for both haemorhagic and thrombotic strokes, caused by the arterio-necrotic or arteriosclerotic lesions in intracerebral arteries. These have been proven by experimental studies to be not only genetically induced but also environmentally influenced by various nutritional factors.

High levels of cholesterol are major factors for athereosclerotic vascular damage causing myocardial infarction and a part of the cause of thrombo-embolic stroke due to external and extracranial arterial lesions.

The recent pathophysiology of blood lipoproteins are treated and related to specific diseases. Special attention is given to recently obtained knowledge on prevention capability of HDL. HDL-C measurement is essential for the assessment of cardiovascular risk in primary prevention. The extent to which physiological concentrations of HDL are rate-limiting for reverse cholesterol transport, however remains uncertain. Evidence is emerging that pharmacologically HDL may have direct effects on the arterial wall in promoting sterol excretion. A potentially anti-atherogenic mechanism which directly involves a subspecies of HDL has also recently been discovered in which HDL protects LDL against oxidative modification due to the presence of the paraoxanase enzymes. There are excellent prospects for the pharmacological modifications of many of these atherogenic processes revealed as the result of recent HDL research. HDL therapy may provide the first direct treatment of the vulnerable unstable plaques, which accounts for the majority of myocardial infarctions and strokes.

We will discuss further the influence of different lipoproteins on the development of cerebrovascular diseases. From mega-studies on the relationship between mortality and lipid changes in primary and secondary prevention we learned more on the prevention of stroke by treatment of the patients with statins. Different studies on stroke prevention should be treated and the conclusion is that statins are able to stabilize the disease at least but there is also a prevention included.

Well balanced supplies of the beneficial dietary factors and treatment with statins are further expected to aid in prevention of stroke and major CVD by controlling hypertension, atherosclerosis and thrombosis.

«Bad» and «Good» cholesterol

http://www.ulb.ac.be/erasme/edu/fcc/cholesterol/info.htm