

Z warsztatów badawczych i doświadczeń klinicznych

ZABURZENIA GOSPODARKI ŻELAZOWEJ I METABOLIZMU LIPOPROTEIN U OSÓB NADUŻYWAJĄCYCH ALKOHOLU

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DISORDERS OF IRON AND LIPOPROTEIN METABOLISM IN ALCOHOL ABUSERS

ABSTRACT – Alcohol abuse is the cause of disorders in ferric ions metabolism, resulting in an excess deposition of iron in the liver in approximately a third of alcohol dependent people. An excessive accumulation of body iron in heavy drinkers is confirmed by the results of laboratory blood serum tests (an increase in concentration of ferritin, a protein storing ferric ions, a decrease in levels of transferrin, a protein transporting ferric ions, and finally, an increase in transferrin saturation with iron). Changes in iron metabolism parameters include also an increase in the serum concentration of carbohydrate-deficient transferrin (CDT) regarded as a marker of alcohol abuse.

An increased serum concentration of the anti-atherogenic HDL fraction and decreased concentration of the pro-atherogenic LDL fraction characterize lipid metabolism disorders observed in states of alcohol abuse. Among other mechanisms underlying decreased LDL concentration in the blood serum of heavy alcohol drinkers there is an enhanced elimination of modified (oxidized and etylated) lipoproteins of this fraction via scavenger receptors. The process occurring on macrophages results in cholesterol accumulation in these cells and accelerates early atherosclerotic changes. Concentration of the VLDL fraction in the blood serum of alcohol abusers is initially increased, but chronic alcohol abuse leads to a decrease in these lipoproteins level.

Some epidemiological studies indicate a relationship between an increase in the body iron storing and the risk of cardiovascular diseases. The atherogenic role of iron may be related to the catalytic action of this ion in the low-density lipoproteins (LDL) oxidation processes.

Stimulating action of free iron in the formation of toxic oxygen radicals evoking lipid peroxidation may indicate interdependence between iron metabolism disorders and lipoprotein metabolism in alcohol abusers.

Key words: alcohol abuse, iron metabolism, blood lipoproteins, atherosclerosis.

Wpływ alkoholu na gospodarkę żelazową organizmu

Przewlekłe nadużywanie alkoholu może prowadzić do zmian w metabolizmie żelaza oraz wpływać na stężenie i strukturę białek magazynujących i transportujących