

**DIETARY SUPPLEMENTATION AND HOMOCYSTEINE LEVELS AND ITS EFFECT  
ON CARDIOVASCULAR DISEASES**

**Davor Korčok<sup>1,2\*</sup>, Milan Ćirić<sup>2</sup>**

<sup>1</sup>University Business Academy in Novi Sad – Faculty of Pharmacy Novi Sad, Novi Sad, Serbia

<sup>2</sup>Abela Pharm ltd., Belgrade, Serbia

\*davorkorcok@abelapharm.rs

Elevated homocysteine levels increases the risk of cardiovascular diseases. The aim of this study was to review the literature date on the mechanisms by which homocysteine promotes atherosclerosis and therefore the progression of cardiovascular diseases, as well as the benefits of dietary supplementation that affect the homocysteine levels, on patients' general health. Review of a number of large studies suggested the mechanism of action and the effectiveness of dietary supplements on homocysteine levels. Recent studies showed that the intake of the active form of folic acid (5-methyltetrahydrofolate), vitamin D, vitamin C, vitamin B6 and vitamin B12 significantly reduces homocysteine levels in blood and therefore is recommended for lowering the risk of atherosclerosis and consequently coronary heart disease, stroke and blood vessels disorders. There are possible interventions capable of reducing homocysteine levels and therefore the risk of cardiovascular diseases. One of the therapeutic possibilities can be the use of dietary supplements. It was concluded that the elevation of homocysteine levels is associated with atherosclerosis which is mediated by its effect on oxidant stress mechanisms, vasodilatation process and on platelet adhesion and aggregation. Further research will be needed to determine its impact on cardiovascular diseases.

## **DODACI ISHRANI I NIVO HOMOCISTEINA I NJEGOVIH EFEKATA NA KARDIOVASKULARNE BOLESTI**

**Davor Korčok<sup>1,2\*</sup>, Milan Ćirić<sup>2</sup>**

<sup>1</sup>Univerzitet Privredna akademija u Novom Sadu – Farmaceutski fakultet Novi Sad,  
Novi Sad, Srbija

<sup>2</sup>Abela Pharm d.o.o, Beograd, Srbija

\*davorkorcok@abelapharm.rs

Povišen nivo homocisteina povećava rizik od kardiovaskularnih bolesti. Cilj ovog literaturnog istraživanja bio je da se ispituju mehanizmi kojima homocistein podstiče aterosklerozu, a samim tim i progresiju kardiovaskularnih bolesti i ispitati uticaj i prednosti dodataka ishrani koji utiču na nivo homocisteina (folna kiselina, vitamin B6 i vitamin B12) i opšte zdravlje pacijenata sa kardiovaskularnim bolestima. Pregledan je veliki broj studija koje sugerišu na mehanizam delovanja i efikasnost dijetetskih suplemenata u regulaciji nivoa homocisteina. Najnovija istraživanja su pokazala da unos aktivnog oblika folne kiseline (5-metiltetrahidrofolat), vitamina D, vitamina C, vitamina B6 i vitamina B12 značajno smanjuje nivo homocisteina u krvi i stoga se preporučuje za smanjenje rizika od ateroskleroze i posledično koronarne bolesti srca, moždanog udara i poremećaja krvnih sudova. Moguće su intervencije koje mogu smanjiti nivo homocisteina, a samim tim i rizik od kardiovaskularnih bolesti. Jedna od terapijskih mogućnosti može biti i primena dodataka ishrani. U ovoj studiji je zaključeno da je povišen nivo homocisteina povezan sa aterosklerozom koja je posredovana njegovim učinkom na mehanizme oksidativnog stresa, proces vazodilatacije i na adheziju i agregaciju trombocita. Zaključeno je da postoje naučni dokazi u vezi primene dijetetskih suplemenata u terapiji određenih kardiovaskularnih bolesti. Biće potrebna dalja istraživanja kako bi se utvrdio njegov uticaj na kardiovaskularne bolesti.