Nutraceuticals for Improving Health and Prognosis in Cardiovascular Disease

Dr Vinod Nikhra M.D.

Hindu Rao Hospital & NDMC Medical College,

New Delhi, India

ABSTRACT

NUTRITION AND CARDIOVASCULAR HEALTH: The modifiable risk factors for CVD include obesity, hypertension, hyperlipidaemia, T2DM, MetS and lifestyle risk factors such as smoking, physical inactivity and dietary factors. Foods and nutrients play a vital role in functioning of various body organs and are helpful in maintaining health and in reducing the risk of various diseases. Several compounds from everyday foods and certain dietary supplements, have been documented to protect health and prevent the development of CVD.

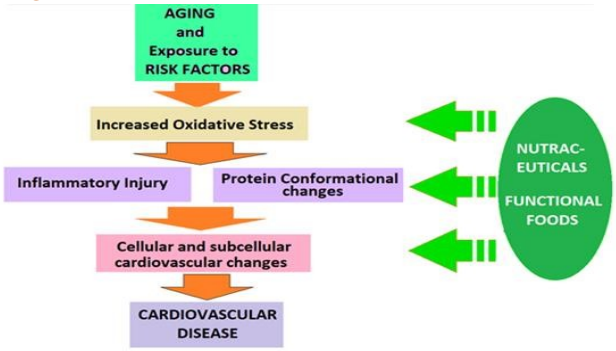
POTENTIAL NUTRITIONAL FACTORS FOR CV HEALTH: The nutraceuticals include phytosterols, sterols and stanols, which are present in a range of plant products including various fruits and vegetables, cereals, seeds and nuts. Polyphenols are phytochemicals in fruits, vegetables, cereal and legumes, and also found in beverages produced from plant products such as tea, coffee, wine and cocoa. These compounds include flavonoids and phenolic acids, as well as stilbenes and lignans. The phenolic compounds are found in grapes and these include anthocyanins, flavanols, flavonols, phenolic acids and stilbenes including resveratrol (3,5,4'-trihydroxy-trans-stilbene). Resveratrol is present in smaller quantity in cranberries, blueberries and peanuts. Spirulina (*Cyanobacterium*) is a rich source of carotenoids and phycocyanins, and its supplementation has been associated with beneficial alterations in TC and LDL-C concentrations.

MODIFYING CVD AND RETARDING CV AGING: The nutraceuticals with the potential to modify the plasma lipid profile, retard and potentially reverse atherosclerosis process and reduce the CVD risk. The sterols/stanols reduce LDL-C through reduction in intestinal absorption of cholesterol, upregulation of hepatic LDL receptors and reduced production of endogenous cholesterol. The sterol/stanol consumption is inversely related to circulating LDL-C concentrations. Polyphenols, too, influence plasma lipid concentrations favourably. The flavanols in cocoa products are associated with improvement of lipid profile. Consumption of grapes and grape juice, containing resveratrol, has been linked with improvement in HDL-C levels. Coenzyme Q10 use appears to improve myocardial function and improve endothelial function.

Polyphenols consumption of flavonoid-rich fruits and vegetables may lower blood pressure.

CONCLUSION – NUTRITION MODIFICATION BENEFITS: The dietary interventions using nutraceuticals open novel, potentially easy and affordable possibilities for population-based strategies for CVD risk reduction, and opportunity to utilize the nutraceuticals to positively influence CV risk factors should be recognized as an enormous opportunity.

IMAGE



REFERENCES

1. Roth GA, Huffman MD, Moran AE, et al. 2015. Global and regional patterns in cardiovascular mortality from 1990 to 2013. Circulation, 132; 1667-78.
2. Alissa EM, Ferns GA. 2012. Functional foods and nutraceuticals in the primary prevention of cardiovascular diseases. J Nutr Metab, 10.1155/2012/569486.
3. Sosnowska B, Peter Penson P, Banach M. 2017. The role of nutraceuticals in the prevention of cardiovascular disease. Cardiovasc Diagn Ther. 7(Sup.1); S21–S31.
4. LaRocca TJ, Martens CR, Seals DR. 2017. Nutrition and other lifestyle influences on arterial aging. Ageing Res Rev. 39; 106-19.
5. Zuchi C, Ambrosio G, Lüscher TF, Landmesser U. 2010. Nutraceuticals in cardiovascular prevention: lessons from studies on endothelial function. Cardiovasc Ther. 28:4; 187-201. (Contd.)

KEYWORDS: Cardiovascular health, Cardiovascular disease, Cardiovascular aging, Hypertension, Hyperlipidaemia, Nutraceuticals, Obesity, Resveratrol, Coenzyme Q10, Cardiovascular risk factors.



Photograph

Dr Vinod Nikhra is a Senior Consultant Physician and Faculty at NDMC Medical College and Hindu Rao Multi-speciality Public Hospital, New Delhi, India. He is a healthcare administrator, academician and clinician. He has been a Visitor at Cleveland Clinic Foundation, Cleveland and an Observing Physician at Alabama Medical Center – a tertiary care hospital in Opelika, Alabama, USA. He has been elected a Fellow by International Medical Sciences Academy and the Royal Society of Medicine, London. He has been Editor of 'Madhya, the midage', the official Journal of Association for Health in Middle Age during 2003-2006. He has been on Reviewer panel of, among others, the Family Practice, an Oxford University medical journal and International Journal of Obesity. His published books include, 'Aging slowly, Living longer' and 'The Anti-obesity Guide'. Over the years he has contributed about hundred papers in leading national and international medical journals.

Email: drvinodnikhra@rediffmail.com Alt.email: drvinodnikhra@gmail.com