

Preventive measures to fight cardiovascular disease: current results and future perspectives

Volume 3 Issue 4 - 2015

Editorial

Heart disease have been universally recognized as a leading cause of death since the number of factors related to cardiovascular disorders is constantly in progress and able to cause heart and blood vessel disorders. However, there is evidence that the lack of power to change some risk factors such as family history, sex or age may be counterbalanced by some key heart disease prevention steps that can be taken into account. According to epidemiological assessment,¹ in summary four strategies should be carefully followed to reduce the rate of cardiovascular disease and events:

- a. Do not smoke!
- b. Daily exercise of 30 minutes for at least five days of every week.
- c. Eat a healthy diet.
- d. Reduce stress and conflicting circumstances.

Following these suggestions, what have been the results achieved and how did the communities of people agree that?

It is worth noting that preventive measures are believed to play a basic role to reduce the rate of disease in several fields of medicine, including the cardiovascular system. In addition, reports²⁻⁴ emphasize that all the mentioned strategies evoked seem to be useful to reduce heart rate risk, although some have been associated with more favorable effects. Thus, other fields of medical disease should be not related to similar results than those observed for cardiovascular alterations. A close, but adverse, relationship exists between smoking and cardiovascular system.⁵ In summary, both active and passive smoke harm the cardiovascular system by functional and morphological lesions mainly consisting of impaired cardiac performance during exercise, particularly in those individuals suffering from ischemic heart disease, accelerated progression of the steps of atherosclerosis and dysfunction of the endothelium and microcirculation, which causes damage of several body organs, which meet progressive failure. However, the basic answer we have to establish is what quitting smoking determines.

It would seem that heart disease risk associated with smoking begins to decrease immediately after quitting. The decrease continues exponentially over time, with a risk cut to half 1 year after quitting. In the absence of heart disease within 15 years of quitting, the real risk is nearly the same as the risk of someone who has never smoked. In addition, the deaths from heart disease as well as cardiovascular events like sudden death and chest pain from effort angina are reduced by one-third in people who quit smoking compared with people who continue smoking. According to these data, some United States communities living in Montana, Colorado, New York, Massachusetts, Indiana, and Ohio have banned smoking at worksites and public places. In addition, some countries of Europe, including Italy, Ireland, Norway, Scotland, and France, are taking into account similar bans with promising results observed in both previous smokers and non-smokers passively exposed.

Finally, there is evidence that "stop smoking and keep walking"⁶ actively prevent the thromboangiitis obliterans. These observations confirm that avoiding smoking is imperative primarily when is associated with other preventive measures. With regard to the daily exercise, unanimous opinions exist about the beneficial effects on keeping the health of the cardiovascular system, although discrepancies in the manner to lead this performance are frequently issued. Generally, from the results observed in personal findings⁷ there would be evidence that the ability of fitness training to reduce cardiovascular risk is not still absolutely proven, although consistent data, statistically analyzed, show that well programmed fitness in a healthy population is able to reduce both the rate of ischemic heart disease and cardiovascular events, particularly sudden death.

The most consistent observation of the beneficial effects in the prevention of cardiovascular disease arises from the Puerto Rico Heart Study,⁸ which described a reduced incidence of morbidity and mortality from cardiovascular disease in healthy individuals who practiced fitness, but mainly, the fact that sedentary subjects had 38% more cardiovascular deaths, an enormous tragedy for the population.

The type of diet has been discontinuously related to a beneficial effect to prevent cardiovascular disease in healthy individuals. On the contrary, poor results due to the diet have been described in those subjects suffering from disorders of the heart and blood vessels. In addition, reduction in salt intake, often suggested, has been emphasized as a therapeutic rather than dietetic measure. It is worth noting that Mediterranean diet would seem to have a protective, but not clearly demonstrated, role in the control of same metabolic parameters favoring the appearance of atherosclerotic alterations and, generally, vascular heart disease.⁹ Briefly, the Mediterranean diet consists of consumption of non-refined cereals, vegetables, fish, fruit, olive oil and moderate red wine with little use of white and red meat.

The main characteristic of this type of food is to supply a low amount of saturated fats and so reduce LDL-cholesterol concentrations. However, it is not clear whether a Mediterranean diet exerts beneficial effects on people suffering from cardiopathy or merely prevents heart disease in healthy subjects.

Major significance shows dietary supplementation in people suffering from cardiovascular disease. The most important clinical trials evaluating the effect of antioxidant therapy utilized mainly antioxidant vitamins, such as vitamin E, vitamin C and beta-carotene or their combination to prevent endothelial dysfunction.¹⁰ However, also the results obtained by this strategy are far to be completely assessed. The role of the stress and conflicting circumstances has been evaluated by a large number of papers, which, however, did not reach unanimous conclusions.

There are a large number of possible causes of stress going from conflictual stress sources at workplace to that at home and environment. These conditions are often supported and made worse by psycho-social attitudes. However, according to a recent review, there is moderate evidence that work-related stress (e.g. high psychological demands, lack of social support, and job strain) are risk factors for incident cardiovascular disease in men, while women findings were too few to draw firm conclusions. Conflicts, crises, and long-term stressful conditions in family life have also been shown to increase coronary heart disease risk.¹¹ This short analysis undoubtedly shows that firm conclusions about the beneficial effects due to strategies involving preventive measures do not exist.

Conclusion

Therefore, my personal opinion is to follow those characterized by low costs and, primarily, absolutely not damaging subjects suffering from cardiovascular disease.

Acknowledgments

None.

Conflicts of interest

None.

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