Exercise in Patients with Essential Hypertension: Current Concepts

Eleni Gavriilaki1*, Barbara Nikolaidou and Eugenia Gkaliagkousi1

12nd Propedeutic Department of Internal Medicine, Aristotle University of Thessaloniki, Greece
2Hippokration General Hospital, 49 Konstantinoupoleos Street, 54643 Thessaloniki, Greece

Essential hypertension represents a major public health problem leading to over 7 million deaths annually [1], as blood pressure (BP) levels are directly associated with vascular and overall mortality [2]. Accumulating data point towards a beneficial role of lifestyle changes, including increased physical activity, in promoting traditional cardiovascular risk factors’ control (i.e. obesity, dyslipidemia, diabetes mellitus and hypertension). The importance of physical activity in essential hypertension is better understood taking into consideration that obesity, dyslipidemia and diabetes mellitus are common in hypertensive patients.

In 1953, Morris et al. [3] provided the first piece of evidence suggesting an association between fitness status and morbidity/mortality with their study on drivers and conductors of London’s double-decker buses. Since then, well-designed epidemiological studies have confirmed the beneficial effects of adequate exercise on cardiovascular and all-cause mortality in healthy middle-aged [4-8] and older [9-11] men and women. Aerobic exercise exerts its beneficial effects on the cardiovascular system by promoting traditional cardiovascular risk factors’ regulation (such as obesity, diabetes, dyslipidemia and hypertension). In terms of underlying pathophysiology, aerobic exercise seems to favorably regulate sympathetic nervous system (SNS) activity, inflammatory response, cardiac and vascular function (both arterial stiffness and endothelial dysfunction) [12].

Interestingly, the beneficial effects of exercise in cardiovascular health depend largely upon exercise type (strength or resistance vs. endurance exercise), frequency, duration and intensity. The reluctance towards resistance exercise tends to be replaced by an overwhelming number of studies and recent meta-analyses [13,14] showing its beneficial role, especially in combination with aerobic exercise analysis. However, additional studies are needed in order to further clarify its effects on cardiovascular risk management.

Despite the beneficial effects of regular physical activity on the cardiovascular system, acute physical activity has been implicated in triggering of acute cardiac events. In accordance with the aforementioned results, a recent meta-analysis of 14 studies showed a significant association of episodic physical and sexual activity with Cardiovascular events. In exercise on exercise training: molecular mechanisms. Circulation 122: 1221-1238.


References

*Corresponding author: Eleni Gavriilaki, Hippokration General Hospital, 49 Konstantinoupoleos Street, 54643 Thessaloniki, Greece, Tel.: +30 2310 892 108; Fax: +302310 528 447; E-mail: elenicelli@yahoo.gr

Received April 12, 2013; Accepted May 18, 2013; Published May 20, 2013


Copyright: © 2013 Gavriilaki E, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.