Research Article

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Determinants of blood pressure profile among office workers

Abstract

Sedentary behavior is clearly linked to higher blood pressure. No evidence of work related inactivity was found as a risk factor. We aimed through this short report to search for occupational risk factors of higher blood pressure in office sedentary workers.

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Introduction

Experts estimate that 7.1 million deaths per year are attributed to hypertension. Many risk factors are incriminated in hypertension genesis. It is also firmly believed that physical inactivity increases the risk of coronary, cerebral, and peripheral vascular diseases, including hypertension.[1] However, though considered as the most important modifiable risk factor, physical inactivity continues to increase rapidly to a global pandemic status. In fact, inactivity is described as one of the biggest challenges in health. Cardio metabolic risk factors and poor mental health have all been linked to sedentary behavior. Prolonged sitting at work place is thought to slow the metabolism and can affect the way the body controls sugar levels, the breakdown of fat and blood pressure.[2–4] Our objective was to search for occupational associated factors to a higher pressure profile among office workers with sedentary work habits.

Methods

We conducted a cross-sectional study in 104 workers in the district of Monastir Tunisia Telecom during three months. The response rate was of 80, 7%. It was based on the administration of a questionnaire including professional and personal characteristics. Activity score was calculated using the International Physical Activity Questionnaire (IPAQ).[5,6] The blood pressure was measured by the interviewer after 15 minutes of rest.

Results

The mean age was 39,8 years [25;59]. The sex ratio was 0.448. More than the half of the study population had an overweight or an obesity. Five percent of our population had a systolic blood pressure ≥140 mmHg and 9,5% had a diastolic blood pressure ≥ 90 mmHg. The systolic blood pressure was statistically associated with sex (p=0,001), age (p<0,001), body mass index (BMI) (p=0,003), domestic activity and gardening (p=0,001), time spent in sitting position during the weekend (p=0,013). These same factors were statistically associated with diastolic blood pressure besides the total score of the physical activity. The final model of linear regression showed that age, sex and the BMI were responsible in 29% of the variation of a systolic blood pressure and that BMI, total score of the physical activity and time spent in sitting position during the weekend were associated with 24% of the variation of diastolic blood pressure.

Discussion

Our results show that workers with a higher sitting time during the weekend or a lower total score of a total physical activity were more likely to develop a hypertension. We considered that sedentary work place could be a risk factor for hypertension, but surprisingly, no occupational risk factors were found to influence the blood pressure in office workers who are known to be inactive at least at work. Nevertheless, spreading awareness and promoting healthy lifestyle through workplace interventions are recommended to reduce this risk.[7,8] In fact, with recent evidence indicating that regular participation in physical activity improves hypertension management, exercise has gained importance as a safe, healthy, and effective preventive and treatment option for hypertension.[7] Though, in workplace, we have more and more sedentary workstations. Although several interventions have aimed to increase physical activity levels in the workplace (eg, by using stability balls instead of chairs and sit–stand work stations instead of traditional desks), the scientific literature consists of either low-quality evidence or equivocal results on the effect of these interventions.[9–12] Nevertheless, different opportunities for increased physical activity in the workplace are spreading such as the walking meetings. In fact, sedentary workers in many occupational sectors are supportive of transforming regular seated meetings into walking meetings and increased their work related physical activity levels.[13]

Conclusion

We are convinced, even though our study did not find any occupational risk factor for hypertension, in sedentary office workers, that we should compare the risk with a group of workers in a work with physical strain to prove that work related physical activity is a protective factor from higher blood pressure. It is presently clear that the strive should not only be conducted against domestic inactivity but also work related inactivity. A slight increase in physical activity could result in considerably reduction in blood pressure.

Acknowledgement

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Conflict of interest

The authors declare there is no any conflict of interest.

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