# Risk factors and arterial hypertension

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## ABSTRACT

Cerebrovascular risk factors are increasingly present in modern society. These include a range of pathologies in which some of them are already beginning to be considered a serious public health problem. The study of these factors and the impact they may have on the morbimortality of the population should be a source of high concern for health authorities. The main objective was to understand the cerebrovascular and cardiovascular risk factors present in the study population and their relationship with the presence of arterial hypertension. This cross-sectional, analytical and observational study was carried out in all municipalities in the district of Castelo Branco, in the interior region of Portugal. A total of 11316 individuals were studied, of which 55.6% belonged to the female gender (n = 6292) and 44.4% to the male (n = 5024). Of these 75.9% reported being sedentary, 63.5% were overweight and obese, 54.1% said they had a family history of hypertension and 41% had knowledge of having hypercholesterolemia. The results obtained demonstrate that there is a high prevalence of cerebrovascular and cardiovascular risk factors. **Keywords:** Prevalence; Risk factors; Arterial hypertension.

## INTRODUCTION

Hypertension is the most important risk factor for cerebrovascular and cerebrovascular diseases, especially in relation to the presence of acute myocardial infarction (AMI) and cerebrovascular accident (CVA), which in turn are important causes of morbidity and mortality around the world (Uva and Vitorino, 2014), (Perdigão and Rocha, 2011). In Portugal, about 40 thousand individuals die each year due to these two pathologies, in which about 20 thousand deaths / year occur due to stroke and 10 thousand deaths / year by EAM's (Macedo and Lima, 2007).

There are, however, other risk factors that may influence blood pressure values and consequently lead to the development of hypertension (AH). Among the most commonly associated with this pathology, sedentary lifestyle, obesity, smoking, hypercholesterolemia, and Diabetes Mellitus (DM) (Ribeiro and Faria, 2013) and (Cordinhã and Paúl, 2009).

## MATERIAL AND METHODS

In the collection of the sample, and according to defined inclusion criteria, individuals 18 years of age or older residing in the different municipalities, who were willing to voluntarily participate in the study and signed informed consent were considered.

### *Participants*
After all the collected data were collected, a total of 11316 individuals were obtained, in which 55.6% were female (n = 6292) and 44.4% were male (n = 5024), aged 18 and 101 years, and an average of 58.12, with a standard deviation of 17.96 years.

### *Measures*
For the BMI study, the individuals were grouped according to the classification of the World Health Organization (WHO): having low weight <18.5 kg / m2; normal weight was 18.5 - 24.9 kg/ m2; excess weight is 25 - 29.9 kg / m 2; and obesity when> 30 kg / m2 (Mancia and Fagard, 2013).

### *Procedures*
A questionnaire was used that was properly tested before being applied by the investigators. All questionnaires were answered in person.

### *Analysis*
The collected data were inserted, analysed and treated with the statistical analysis program SPSS® (Statistical Product and Service Solution) version 22.0. A simple descriptive analysis was used to characterize the sample and distribute the variables, and the absolute (n) and relative (%) frequencies were calculated for the qualitative variables. As for the quantitative variables, the mean, standard deviation and minimum and maximum values were calculated. A $p \leq 0.05$ and a 95% confidence interval were established as a criterion of statistical significance.

## RESULTS

In the analysis of the risk factors studied by the questionnaire we found that the most prevalent were sedentary lifestyle, body mass index (> 25 kg / m2), family history of hypertension and hypercholesterolemia, with 75.9%, 63.5%, 54, 1% and 41.0%, respectively. It was also verified, in the course of this analysis, that

25.7% of the respondents had smoking habits and 16.0% of the individuals studied had Diabetes Mellitus. In the analysis of the answers given, it was also observed that 18.4% of the respondents reported having cerebrovascular and cerebrovascular diseases. Of these, the majority responded to the presence of Acute Coronary Syndrome (38.5%); 28.4% reported having rhythm disturbances; 14.6% said they had a stroke and 8.6% had valvulopathies.

## DISCUSSION

The study of cerebrovascular risk factors brings us important information about the health status of the general population. This type of investigation allows us to work with the population in a way that makes them aware of the risks inherent in their presence. In this study, when we analysed risk factors that could be associated with arterial hypertension, we found that the most prevalent were sedentary lifestyle, excess weight and obesity, the presence of a family history of hypertension and hypercholesterolemia, all statistically related to the presence of HTA with a p <0.001, which is in line with the results of the AMALIA study, which presents as the most prevalent risk factor the sedentary lifestyle with 65.3%. In the relationship between the data we found with the AMALIA study, we found that hypercholesterolemia had a significantly lower percentage (19.7%) (Perdigão and Rocha, 2011).

We also analysed the prevalence of smoking habits, cardiovascular diseases and DM, which presented, respectively, prevalence's of 25.7%, 18.4% and 16.0%. Regarding the 18.4% of cerebrovascular and cerebrovascular diseases, 38.5% reported a history of acute coronary syndrome and a 14.6% history of stroke. In order to verify if there was a relation between these risk factors and the presence of hypertension, the chi-square test was performed, and it was verified that there was a high significance in all cases (p <0.001). In the AMALIA study regarding DM and smoking, the prevalence was very low (8.9% and 16.3%) (Perdigão and Rocha, 2011). In the study by Gus and Zaslavsky (2004), smoking had a higher prevalence to our study, namely, 34.0%.

This study revealed results that confirm the high prevalence of cerebrovascular and cardiovascular risk factors in the population of Beira Baixa, it is evident that it is necessary to have alert and awareness measures for populations to control cerebrovascular and cardiovascular risk factors.

## CONCLUSIONS

It is important to study the populations in order to assess the best means of communication and alert them.

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