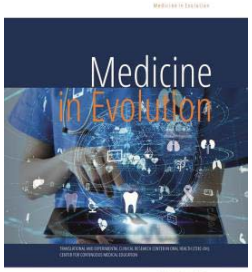
Influence of lifestyle in cardiovascular disease - regional characteristics



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Abstract

With the investigation through epidemiological anamnesis of the cohort of patients with cardiovascular disease admitted for tertiary prevention hospital we retrospectively assessed their cardiovascular risk factors, taking into account the patient's area of origin as it can significantly influence their lifestyle. Specific to this research we consider the constitution of the study group from patients who have a long history of cardiovascular disease, patients on whom risk factors, respectively protective factors have had a long period of action, and the use for characterization of the population, not for their aggregation in tools to assess total cardiovascular risk (as is the trend in large cohort studies since Framingham).

Keywords: cardiovascular risk, cardiovascular diseases prevention, lifestyle influence

INTRODUCTION

For the present research, the ranking of risk factors for cardiovascular disease includes in the top 20 factors that negatively influence the occurrence and prognosis of the disease only 20% medical risk factors, a low percentage are genetic factors and the vast majority are factors attributable to lifestyle habits.

The most risk factors in line with the prevalence obtained are those related to lifestyle - diet, exercise, ingestion of toxic substances - tobacco, alcohol, excess sugar and salt, resting time, lifestyle. Their importance lies primarily in the fact that it is easier to intervene on them.

Conversely, the protective factors ranked in order of importance reveal that simple actions (such as salt restriction) are effective in preventing (at any level) cardiovascular disease. Here social factors play a primary role, followed by diet.

Aim and objectives

The present research, carried out in a group of chronic patients with pre-existing cardiovascular disease, aimed to rank the risk factors in order to identify those on which intervention is possible.

Given the results, i.e. that habits can represent both risk and protective factors for cardiovascular disease, highlighting and grouping according to the region where the subject comes from (generating in turn characteristics on the habits of the subjects) offers the possibility of action (all risk factors associated with lifestyle are modifiable) and allows the identification of distinct vulnerable groups with adapted prevention needs.

MATERIALS AND METHODS

Study sample

The study is a descriptive, observational, epidemiological study conducted on a group of 499 chronic cardiovascular patients from all over the country (nationally representative) admitted for tertiary prevention procedures between January and April 2022.

The selection of patients was made respecting the territorial distribution of the general population (starting from counties and grouped in regions) and the proportions of belonging to the environment of origin (urban/rural) and gender (male/female).

The epidemiological history data were obtained by direct examination by the epidemiologist MD. The medical history of the identified comorbidities was taken from the General Clinical Observation Sheets (GCOS) of the patients in the Cardiovascular Recovery Hospital Dr. Benedek Géza Covasna.

Inclusion criteria:

1.Inpatient, 2. Subject diagnosed with chronic cardiovascular disease prior to inclusion in the study, 3. Patient's agreement and willingness to provide information required for epidemiological investigation of viral vector exposure

Exclusion criteria:

1. Patient without a diagnosis of cardiovascular disease, 2. Acute patient, 3. Lack of consent to participate in the present research.

The selection of patients was done randomly, respecting only the criteria of belonging to the area, gender and environment of origin adjusted to those found in the general population of Romania.

The confidence interval (confidence) for patients selected for the study and the general population of the country is 99% for both gender and background.

For the current research we considered the division of the territory into the 8 current administrative regions that correspond to the historical regions of Romania, regions that **have** different characteristics and lifestyle habits and could provide data on cardiovascular risk factors.

Method

Data from the epidemiological survey were uploaded into a centralising Excel Worksheet for mathematical processing. The information was recorded numerically or later transformed into numerical values No= 0 and Yes=1 for interpretation.

Data analysis was done

- Through tables and graphs using Microsoft Excel
- Statistical mathematical processing using SPSS (Statistical Package for the Social Sciences).
- Discrete variables were presented as percentages, comparisons were made with chi-squared test
- Continuous variables were presented as mean or median by distribution, comparisons were made with t-student

RESULTS

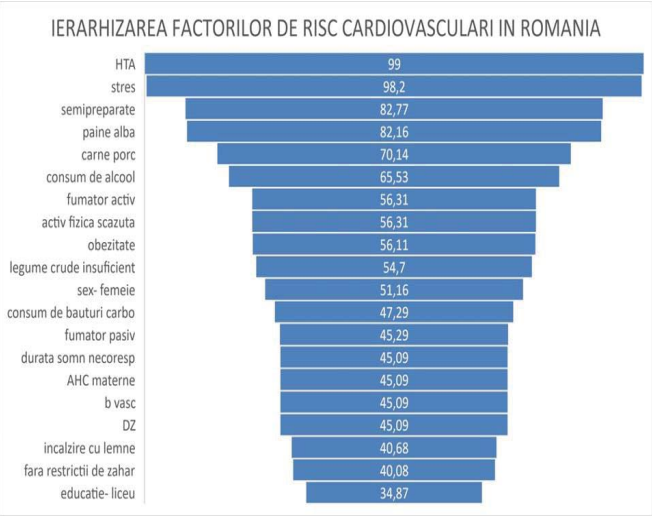

Figure 1. Ranking of cardiovascular risk factors in Romania

In the ranking of risk factors in the population studied, elements in line with the subjects' lifestyle habits are identified with significant weights:

- 56.31% of cardiovascular patients are active smokers and 45.29% are passive smokers. In the research group 56.31% of the subjects are smokers, while 17.43% are former smokers. Compared to the prevalence in the general population (44% of the adult population) the proportion is significantly higher. The period during which smokers have consumed toxic substances is impressive - the average duration is 45.65 years. Also for ex-smokers the data obtained in the present research support that they smoked on average 35.87 years before quitting, and the period without tobacco consumption in this category is 10.08 years, significantly shorter than the period of exposure. In terms of territorial distribution, the highest percentage of active smokers is found in Banat and Transylvania, while smoking prevalence (active and former smokers) is highest in Muntenia and Transylvania, with Muntenia also recording the highest percentage of quitting smoking (highest

percentage of former smokers). The average age of smoking initiation is low, at 21 years. At the same time there is a high percentage of subjects who are passive smokers

- 82.16% consume white bread. For bread consumption, most subjects consume white bread in Bucharest-Ilfov and Banat, while black bread is consumed by the majority of subjects in Bucharest-Ilfov and Banat while black bread is consumed mostly in Moldova and Crişana.
- 82.77% consume semi-prepared meat (highest percentage in Moldova, lowest in Bucharest-Ilfov) and 70.14% consume pork (highest percentage in Dobrogea, lowest in Transilvania region).
- 65.53% consume alcohol (most people consuming alcoholic beverages are found in the study in the Moldova region, and most people not consuming alcoholic beverages in the Banat region). Regarding the frequency of consumption for all types of alcoholic beverages, the habit of daily consumption is found with the highest frequency in Muntenia, weekly consumption of alcoholic beverages is most frequently found in Transylvania, and occasional consumption in Moldova. According to the type of alcoholic beverages consumed by the patients in the study group, in Transylvania they drink the most beer, in Moldova they are the most frequent consumers of wine, and in Bucharest-Ilfov they are the most frequent consumers of refined alcohol (spirits).
- 56.31% have low physical activity (less than 30 minutes daily). The highest proportion of sedentary people is identified among subjects in Muntenia, while the highest proportion of active people (who carry out physical activity over 60 min daily) is in Bucharest-Ilfov.
- 54.7% do not consume adequate amounts of raw vegetables
- 47.29% consume carbonated drinks. Carbonated drinks are consumed by a large proportion of the population with CVD in Bucharest Ilfov and Muntenia, while the highest proportions of people who do not consume carbonated drinks are found in Banat and Crişana.
- 45.09% have inadequate sleep duration. The region with inadequate sleep duration (less than 7 hours/day) is Moldova, while the highest percentage of patients suffering from sleep disorders are in Muntenia.
- 40.08% consume unrestricted sugar.

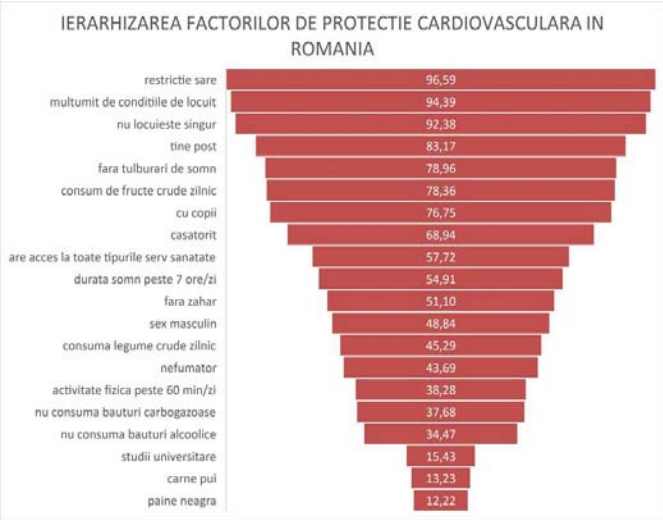

Figure 2. Ranking of cardiovascular protective factors in Romania

- 96.59% of patients with known cardiovascular disease restrict their salt intake, which is practically the protective factor present in this population. In the region of Moldova we find in the research the most patients who do not have a diet to restrict the amount of sodium (salt) ingested, in contrast in Dobrogea and Muntenia all the study population controls the amount of salt.

- 83.17% of the people included in the study practice animal protein restriction (fasting) - practiced in weekly stages, periodically and periods when no solid food is ingested. Most people following this pattern (rooted in religious customs) are in Transylvania for the cohorts studied.

- 43.69% of the subjects are non-smokers, which is an important protective factor (but it should be mentioned that in this percentage there are former smokers or passive smokers).

- Adequate sleep duration (more than 7 hours daily) and sleep quality are mentioned by 54.91% and 78.96% of the subjects respectively.

- eating habits with a cardiac protective profile are the consumption of fruits and vegetables daily, restriction of sugar intake, no alcohol consumption, no consumption of carbonated drinks, predominant consumption of white meat (chicken) mentioned by only 13.23% of the participants and black bread mentioned by only 12.22% of the participants

- 38.28% of patients have physical activity for more than 60 minutes daily

DISCUSSIONS

Limits of the study

1. Subjects with cardiovascular disease in the study are older than the general population averages (the cardiac population has undergone a degree of selection).

2. The patients are admitted to a hospital for tertiary prevention of the underlying disease, they are patients who attach importance to health status, this fact limiting the degree of representation for the population

3. Cases with long term chronic evolution are overrepresented in the group and there is a systematic error of selective survival

4. The same category of patients was not included in the study if they were admitted before 2022

5. As the study group has a uniform distribution we used in the data processing the mean (not the median which is characteristic for non-uniform distribution and is not sensitive to higher values)

6. The use of variable mean data are characteristic for populations, we do not attribute characteristics to members of a group that they do not possess as individuals. Pre-prevention measures will be addressed accordingly to the population in question.

The data processing was done to be able to develop prevention strategies in the interest of the specific individual, not to standardize population characteristics and translate them to the individual thus decreasing their appropriateness.

CONCLUSIONS

We can conclude that even in the case of patients with proven cardiac morbidity, the application of preventive measures is only a desideratum because in fact exposure continues consciously (or unconsciously). Preventive measures can change the quality of life without changing the individual.

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