

## THE RISK FACTORS OF ARTERIAL HYPERTENSION IN ADOLESCENCE

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### Abstract

*The relation between the occurrence of hypertension and a wide range of risk factors is present since childhood. Assuming that cardiovascular morbidity and mortality can be reduced by correcting cardiovascular risk factors, the preventive measures are even more effective if applied early. This paper proposes aims at researching on the prevalence of risk factors correlated with the occurrence of arterial hypertension. In April-May 2013 we conducted a survey on a total sample of 464 asymptomatic adolescents, aged 16-20. The data collection method was the assisted structured questionnaire. Besides the measurement of the body weight, the calculation of body mass index and the measurement of blood pressure, the following factors were assessed: dietary behaviour, physical activity, sleep duration, smoking, alcohol and coffee consumption level, and collateral issues i.e. family history and genetics factors. 14,4% of all patients showed hypertension. 19% had a positive family history relevant in terms of hypertensive diseases. Only 29% of all young people surveyed practice sports and physical activities. 47,62% of subjects admit they are smokers. Prevention of arterial hypertension is based on the concept of risk factors. Risk can be reduced through lifestyle changes. This population group (i.e. adolescents) has inadequate eating habits, and consumes excessively foods rich in saturated fat or fast-food type.*

**Key words:** arterial hypertension, risk factor, adolescence

### INTRODUCTION

Arterial hypertension is ranked on the top of all medical diagnoses made in a family practice. According to statistics, throughout the world, blood hypertension occurs in 25-30% of the entire population( British Hearth Foundation, 2009, Wolf- Maier K, 2003). HTA is major risk factor associated with the possibility of cardiovascular diseases occurrence in the future, along with smoking, dyslipidemia and positive family history( Gan, 2003, Cinteza, 1999).

The entire cardiovascular pathology causes a high level of morbidity and mortality and it represents an important topic for clinical and epidemiological research( Graham 2005, Grundy 1999). Multiple epidemiological studies and various researches have led to the development of a prophylactic concept which is based on existing cardiovascular risk factors( SEPHAR 2006, Hearth Health Charter).

Therefore, the prevention of cardiovascular diseases is based on the management strategy of risk factors (Graham 2007), as follows:

- Strategy applied to population involving the control of risk factors at the population level, i.e. primary prophylaxis of population;

- Strategy applied to groups at risk which includes the identification of risk factors to certain specific groups of population and their containment i.e. primary prophylaxis of individuals;

- Secondary prophylaxis strategy represents the risk factors control at groups of people who have been facing already cardiovascular diseases problems( Nanda 2003, Health Health Charter).

The relation between the occurrence of hypertension and a wide range of risk factors is present since childhood( Grotto 2008). The preventive measures are even more effective if applied early( The Fourth Report on the Diagnosis , 2004).

#### **OBJECTIVE**

Assuming that cardiovascular morbidity and mortality can be reduced by correcting cardiovascular risk factors, this paper proposes aims at researching on the prevalence of risk factors correlated with the occurrence of arterial hypertension.

#### **MATERIAL AND METHOD**

In April-May 2013 we conducted a survey on a total sample of 464 asymptomatic adolescents, aged 16-20. The data collection method was the assisted structured questionnaire which was applied at the same time with the comprehensive health assessment conducted in medical offices within the schools of Oradea. The participation in the survey was based on the free will of the participants.

Besides the measurement of the body weight, the calculation of body mass index and the measurement of blood pressure, the following factors were assessed: dietary behaviour, physical activity, sleep duration, smoking, alcohol and coffee consumption level, and collateral issues i.e. family history and genetics factors.

## RESULTS AND DISCUSSIONS

A total of 67 patients (representing 14.4% of all patients surveyed) showed elevated blood pressure. They were assigned to the group of hypertensive patients, having arterial hypertension systolic values elevated predominantly. Moreover 91 teenagers (19%) had a positive family history relevant in terms of hypertensive diseases.

Regarding eating habits, a total of 101 teenagers (21.76%) have to 2-3 meals/ day, 87 adolescents (18.75%) have 4-5 meals/ day, and 276 patients (59%) have 3-4 meals / day( figure nr 1). A total of 321 teenagers (69%) of the respondents have at least one hot cooked/ warm meal/ day, 250 adolescents (54%) consume cooked food 6-7 times/ week.

A total of 305 (65%) of the surveyed young people eats food high in saturated fats, mainly fat cheese, cheese, sour cream, pork, pork sausage; moreover 186 people (39%) consume fast food type products or French fries.

Assessment of physical activity during physical education classes shows that 286 adolescents (61%) prefer to practice this activity; however during their spare time, only 135 (29%) of all young people surveyed practice sports and physical activities, while the rest stay many hours in front of TV or PC monitors.

The risk factor role of smoking is well known. In Western countries the number of smokers decreases, while in developing countries their number increases( Mullie , 2009). It is known that smokers have a risk of death by 70% higher than non-smokers. In our sample, a number of 221(47,62%) subjects admit they are smokers and that they smoke either at school or at gatherings with friends; among the smokers, 17.5 % declare they smoke 4-5 cigarettes/ day, 8% between 5-10 cigarettes/ day, 15% between 10-15 cigarettes/ day, and approximately 7.5% declare they smoke one package of cigarettes/ day( figure nr 2).

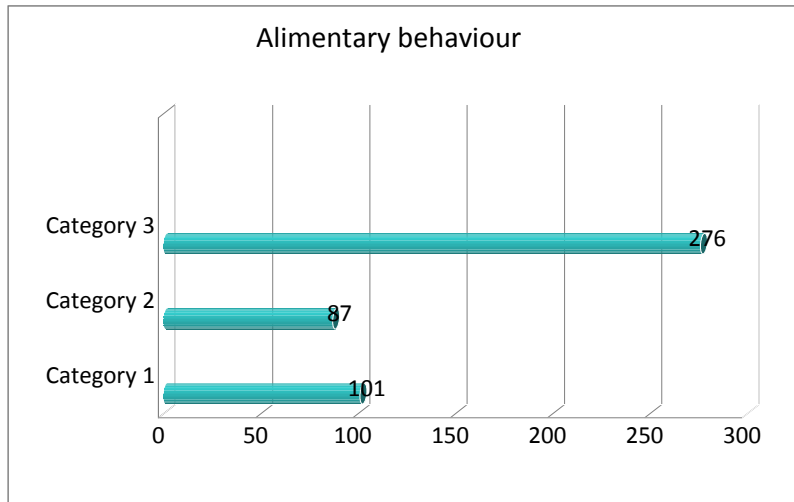


Figure nr 1 Distribution of lot by alimentary behaviour

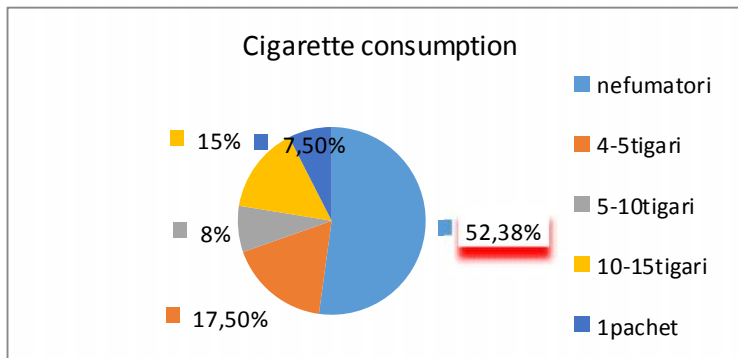


Fig. 2 Distribution of lot by cigarette consumption

A 7-8 hours / night sleep is a prerequisite for a good health condition( MS, Centrul de Sanatate Publica Sibiu, 2005). A percentage of 45.6% people sleep on average 7-8 hours/ night, while 27 % sleep on average 6-7 hours/ night, 15 teenagers (3.2%) declared they sleep on average 5-6 hours/ night. This lack of sufficient sleep is due to the use of toxic substances i.e. coffee, tobacco and alcohol.

## CONCLUSIONS

Prevention of arterial hypertension is based on the concept of risk factors. Risk can be reduced through lifestyle changes.

This population group (i.e. adolescents) has inadequate eating habits, and consumes excessively foods rich in saturated fat or fast-food type. These bad habits are part of the general trend reported throughout the world i.e. risk favouring behaviours based on unhealthy diet, a sedentary lifestyle trend, exposure to toxic substances by smoking, all of the factors aforementioned being a strong warning on the cardiovascular health condition of adolescents in our country.

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