CARDIOVASCULAR RISK IN PATIENTS WITH DIABETIC NEPHROPATHY

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REZUMAT

Introducere: Bolile cardiovasculare reprezintă principala cauză de morbiditate şi mortalitate la pacienţii cu nefropatie diabetică. **Scop:** *Cercetarea riscului cardiovascular la pacienţii cu nefropatie diabetică, utilizând drept indicator grosimea intimă – medie carotidiană.* **Materiale si metode:** *Studiul a fost efectuat pe un grup de 60 de pacienţi (41 bărbaţi şi 19 femei) cu diabet zaharat, dintre care: 20 fără nefropatie diabetică (lotul martor), 21 cu nefropatie diabetică incipientă şi 19 cu nefropatie diabetică clinic manifestă. Toţi pacienţii luaţi în studiu au fost asimptomatici din punct de vedere cardiovascular. Cercetarea riscului cardiovascular la pacienţii cu nefropatie diabetică a fost efectuată neinvaziv, prin determinarea grosimii intimei – mediei de la nivelul arterei carotide comune cu ajutorul ecografului ALOKA ProSound SSD 4000, cu sondă liniară de 10 MHz.* **Rezultate:** *La diabeticii fără nefropatie diabetică, acest indice a avut valoarea 0,62 ± 0,12 mm, pe când la cei cu nefropatie diabetică, 0,99 ± 0,18 mm, diferenţa având semnificaţie din punct de vedere statistic (p < 0,01). Grosimea intimă – medie carotidiană a avut valori mai mari în nefropatia diabetică clinic manifestă (1,11 ± 0,20 mm) decât în cea incipientă (0,8 ± 0,24 mm), p < 0,05.* **Concluzii:** *Astfel, corelaţia a fost puternică în nefropatia diabetică incipientă (r = 0,7513, p < 0,001), respectiv foarte puternică în cea clinic manifestă (r = 0,9103, p < 0,001), evidenţiind creşterea riscului cardiovascular cu importanţa afectării renale în DZ. Datele epidemiologice arată că o valoare a grosimii intimă – medie carotidiană de peste 1 mm, la orice vârstă, se asociază cu o creştere semnificativă a riscului de infarct miocardic şi/sau boală cerebrovasculară.*

Cuvinte cheie: risc cardiovascular, nefropatie diabetica, grosimea intimă – medie carotidiană.

ABSTRACT

Introduction: Cardiovascular diseases are the leading cause of morbidity and mortality in patients with diabetic nephropathy. **Aim:** *The research of cardiovascular risk in patients with diabetic nephropathy, using as indicator the thickness of intima-medium of the*

common carotid artery. **Materials and methods:** *The study was conducted on a group of 60 patients (41 men and 19 women) with diabetes, of which: 20 without diabetic nephropathy (control group), 21 with early diabetic nephropathy and 19 with clinically manifest diabetic nephropathy. All patients that we used for the study were asymptomatic from the cardiovascular point of view. The research of the cardiovascular risk in patients with diabetic nephropathy was made non-invasively by determining the thickness of the intima - medium of common carotid artery using ultrasound ALOKA ProSound SSD 4000, 10 MHz linear probe.* **Results**: *In diabetics patients without diabetic nephropathy, this index value was 0.62 ± 0.12 mm, while in patients with diabetic nephropathy, 0.99 ± 0.18 mm, with a significant statistically difference (p < 0.01). The thickness of the intima - medium of common carotid artery had higher values in clinically manifest diabetic nephropathy (1.11 ± 0.20 mm) than in the early diabetic nephropathy (0.8 ± 0.24 mm), p < 0.05.* **Conclusions:** *The correlation was stronger in early diabetic nephropathy (r = 0.7513, p < 0.001) and very strong in the clinically manifest diabetic nephropathy (r = 0.9103, p < 0.001), highlighting the importance of increased cardiovascular risk and the renal damage associated with diabetes. Epidemiological evidence shows that a thickness value over 1 mm at any age is associated with a significantly increased risk of myocardial infarction and / or cerebrovascular diseases.*

Keywords: cardiovascular risk, diabetic nephropathy, thickness of the intima - medium of common carotid artery

INTRODUCTION

Diabetic nephropathy is one of the microangiopathic complications of diabetes, affecting approximately 30-40% of diabetic patients. Starting with an early stage diabetic nephropathy, cardiovascular risk begins to increase, cardiovascular disease being the main cause of morbidity and mortality in patients with diabetic nephropathy [1,13,14].

Heart diseases in diabetic chronic renal disease is the result of action of many cardiovascular risk factors: some related to diabetes, and others associated to chronic nephropathy. The research of cardiovascular risk in patients with diabetic nephropathy, is made by using the thickness of the intima - medium of common carotid artery [2-5,7]. Epidemiological evidence shows that the thickness value over 1 mm at any age, is associated with a significantly increased risk of myocardial infarction and/or cerebrovascular diseases [16-18]. Among major risk factors, hypertension has the greatest effect on the thickness of the intima - medium of common carotid artery,

probably due to media hypertrophy, which is a specific process of vascular remodeling [21]. Age, overweight, increased cholesterol, diabetes, smoking it is positively associated with the thickness of the intima - medium of common carotid artery level [15].

MATERIALS AND METHODS

The study was conducted on a group of 60 patients with diabetes, (20 without diabetic nephropathy = control group, 21 with early diabetic nephropathy and 19 with clinically manifest diabetic nephropathy) (Figure 1). The mean age of patients was 45.84 ± 16.53 years. All patients taking the study were asymptomatic from the cardiovascular point of view.

The research of the thickness of the intima - medium of common carotid artery was made in 20 patients with diabetes mellitus and diabetic nephropathy, with a mean age of 46.25 ± 15.12 years, and the duration of disease progression 14.07 ± 8.93 years.
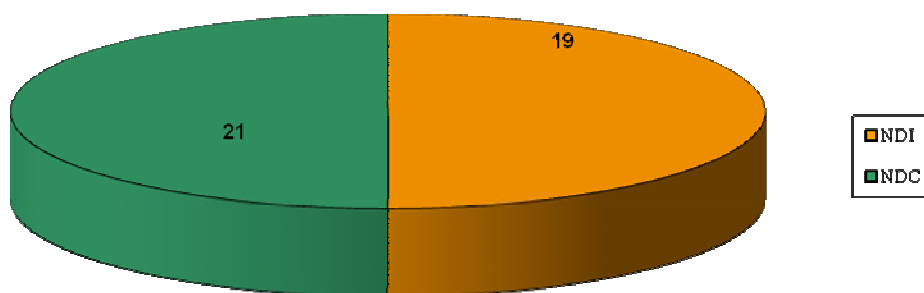
Figure. 1 Distribution of patients by type of diabetic nephropathy

The following biochemical parameters were used (Table 1).

Table 1. Biochemical and imaging parameters investigated in the control group

PARAMETER	MEAN VALUE ± STANDARD DEVIATION
Blood sugar	111.25 ± 62.04 mg/dl
HbA$_{1c}$	7.01 ± 1.05%
Cholesterol	175.21 ± 22.16 mg/dl
Triglycerides	158.77 ± 25.05 mg/dl
Creatinine clearance	119.66 ± 25.66 ml/min
Proteinuria	89.20 ± 12.44 mg/24 hours
The thickness of the intima – medium of the commun carotid artery	0.56 ± 0.12 mm

The evaluation of the of the thickness of the intima - medium of common carotid artery was made from 20 mm before the bifurcation of the common carotid artery, with ALOKA ProSound SSD 4000 ultrasound with 10 MHz linear probe (Figure 2). Normally, the carotid wall thickness is less than 0.5 mm, the intima is a smooth and regular line [6,8,9].

Figure. 2 The thickness of the intima-medium of the common carotid artery in the control group

Statistical processing was performed with special software EPI INFO 6, EPI INFO 3.2.2.

RESULTS

The following biochemical and imaging parameters were obtained. They are presented in Table 2

Table 2. Biochemical and imaging parameters investigated

PARAMETER	MEAN VALUE ± STANDARD DEVIATION
Blood sugar	227.08 ± 102.62 mg/dl
HbA$_{1c}$	$12.40 \pm 2.70\%$
Cholesterol	278.44 ± 54.28 mg/dl
Triglycerides	342.66 ± 108 mg/dl
Creatinine clearance	84.78 ± 16.81 ml/min
Proteinuria	907 ± 358.72 mg/24 ore
The thickness of the intima – medium of the common carotid artery	0.99 ± 0.18 mm

Comparing the thickness values from the control group with those of patients with diabetic nephropathy (incipient and clinically manifest) (Table 3), there is a growth at the last one, the difference being highly statistically significant ($p < 0.01$) (Figure 3) [10-12].

Table 3. The control group values of the thickness of the intima – medium common carotid artery vs the group with diabetic nephropathy

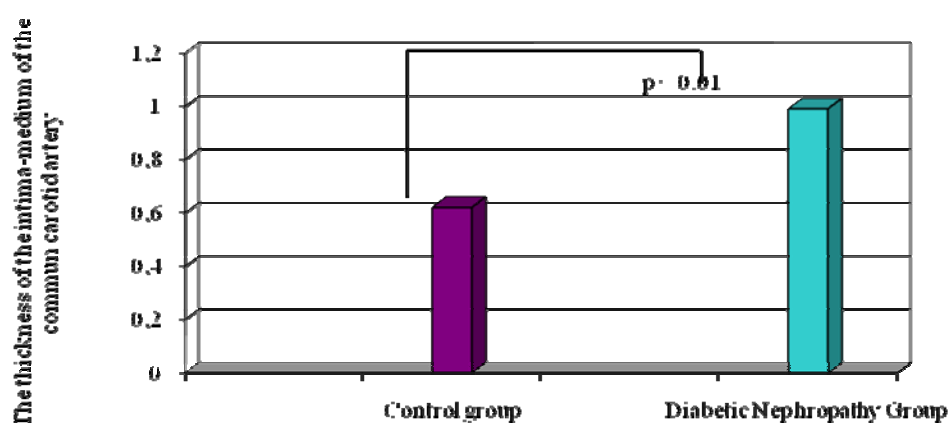| PATIENTS	THE THICKNESS OF THE INTIMA – MEDIUM COMMON CAROTID ARTERY (MEAN VALUE ± STANDARD DEVIATION)
Control group	0.62 ± 0.12 mm
Diabetic nephropathy	0.99 ± 0.18 mm

Figure. 3 The control group values of the thickness of the intima –

The values of the thickness of the intima - medium of the common carotid artery classified on the severity of diabetic nephropathy (Table 4), are showing a significant difference statistically between

the thickness in patients with early diabetic nephropathy (NDI) and in those with

clinically evident diabetic nephropathy (NDC) (p < 0.05) (Figure 4) [19, 22, 23].

Table 4. The values of the thickness of the intima-medium of the common carotid artery among the patients studied

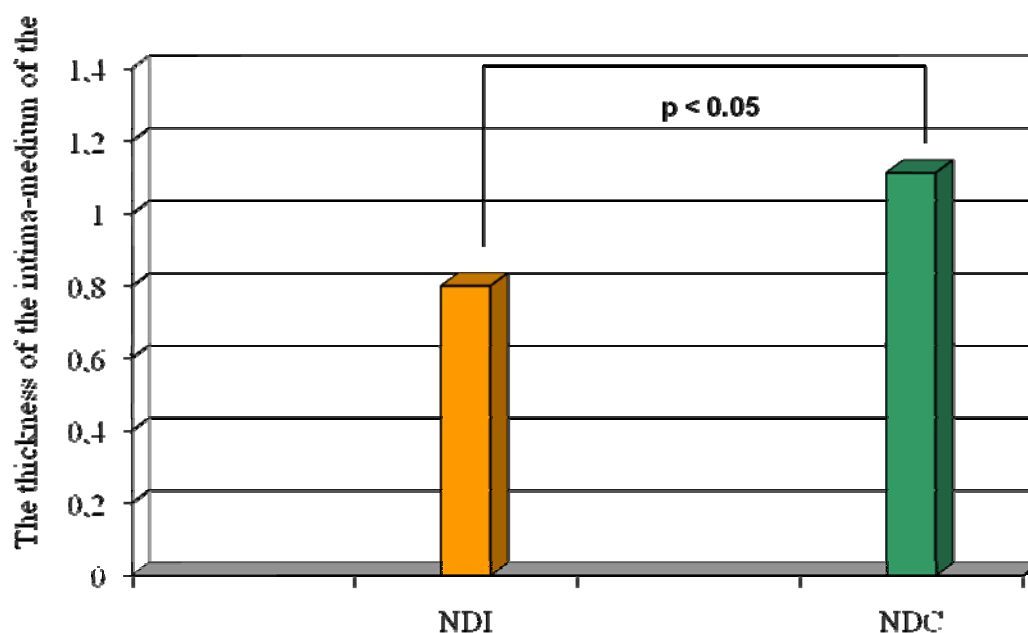| PATIENTS	THE THICKNESS OF THE INTIMA – MEDIUM COMMON CAROTID ARTERY (MEAN VALUE ± STANDARD DEVIATION)
Control group	0.56 ± 0.12 mm
Early diabetic nephropathy	0.8 ± 0.24 mm
Clinically manifest diabetic nephropathy	1.11 ±0.2 mm
	P < 0.05

Figure. 4 The values of the thickness of the intima - medium of the

Statistical processing pointed out these: a strong inverse correlation between proteinuria (a marker of renal damage in

diabetic nephropathy) and the thickness of the intima - medium of the common carotid artery in NDI (r = - 0.7753, p < 0.001 (Figures 5,6) [19,24].
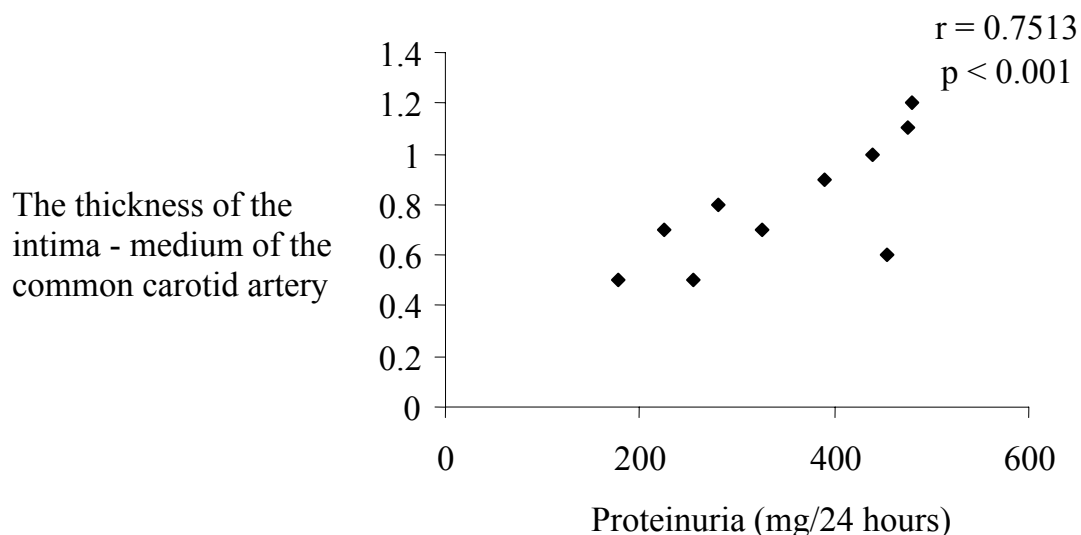
Figure. 5 Correlation between proteinuria and the thickness of the intima-medium of the common carotid artery

Figure. 6 The increased thickness of the intima-medium of the common carotid artery

DISCUSSIONS

In normal individuals, carotid wall thickness is less than 0.5 mm, the intima is a smooth and regular line. At diabetic patients without diabetic nephropathy, this index value was 0.62 ± 0.12 mm, while in patients with diabetic nephropathy, 0.99 ± 0.18 mm, with a significant statistical difference ($p < 0.01$). The thickness of the intima-medium common carotid artery had higher values in clinically manifested diabetic nephropathy (1.11 ± 0.20 mm) than in the early nephropathy (0.8 ± 0.24 mm), $p < 0.05$. It was established different correlation degrees between renal impairment, defined by the thickness of proteinuria and the thickness of the intima-medium of the common carotid artery. Thus, the correlation was stronger in early diabetic nephropathy ($r = 0.7513$, $p < 0.001$) and very strong in the clinically manifested nephropathy ($r = 0.9103$, $p < 0.001$), highlighting the importance of increased cardiovascular risk of renal damage in diabetes.

Epidemiological evidence shows that the thickness value higher than 1 mm at any age is associated with a significant increased risk of myocardial infarction and / or cerebrovascular diseases.

CONCLUSIONS

Cardiovascular risk in patients with diabetic nephropathy is determined on one hand by the risk factors associated with diabetes, and on the other by those associated with chronic renal disease [20,26].

Non-invasive methods for research and stratification of cardiovascular risk assessment are represented by the thickness of the intima – medium of the common carotid artery.

Cardiovascular risk is still present in the early stage of diabetic nephropathy, and increases with the severity of diabetic renal disease. Cardiovascular risk increases with the degree of the proteinuria.

The presence of the microalbuminuria or proteinuria requires identification of all cardiovascular risk factors, in the therapeutic interventions for their correction [25].

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BODY MASS INDEX AT ADOLESCENTS FROM WEST OF ROMANIA

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REZUMAT

*Dintre indicii antropometrici corelativi care sunt combinaţii ale greutăţii şi înălţimii, şi cu valoare de indice de obezitate, cel mai fidel este Indicele de Masă Corporală (IMC). **Metoda** antropometrică s-a aplicat unui eşantionul de 800 de elevi de gimnaziu şi unui eşantion reprezentativ de 2908 liceeni, din judeţul Timiş, mediul urban. **Rezultatele** indică: predominenţa adolescenţilor normoponderali, mai frecvenţi între 15-19 ani, 85,8%, faţă de perioada 11-14 ani cu un procent de 79,4%, şi a fetelor faţă de băieţi; situarea pe locul doi a adolescenţilor subponderali, mai frecvenţi în perioada 11-14 ani cu un procent de 9%, faţă de 5,3% în perioada 15-19 ani, şi cu pondere mai mare a băieţilor în gimnaziu şi a fetelor în liceu; adolescenţi supraponderali mai frecvenţi în perioada 11-14 ani cu 10,8%, faţă de perioada 15-19 ani cu 7,8%, şi fete mai frecvente în gimnaziu şi băieţi mai mulţi în liceu; adolescenţi obezi în procentaj de 0,8% între 11-14 ani şi 0,7% între 15-19 ani, şi fete mai frecvente în gimnaziu şi băieţi mai mulţi în liceu. Monitorizarea creşterii copiilor şi adolescenţilor prin indicele de masă corporală este recomandarea experţilor OMS pentru stoparea epidemiei de obezitate în lume.*

Cuvinte cheie: *adolescenţă, antropometrie, IMC*

ABSTRACT

*Between the correlative anthropometric indexes that are combinations of height and weight, and with index of obesity value, the most faithful is the Body Mass Index (BMI). The anthropometric **method** was applied to a sample of 800 secondary school students and a representative sample of 2908 high school students, in Timis county, urban area. **Results** show: normal weight adolescents prevailing more frequent between 15-19 years, 85.8%, compared to the period between 11-14 years with a rate of 79.4%, and of girls compared to boys; the second place of underweight adolescents more frequent in the period 11-14 years at a rate of 9% compared to 5.3% between 15-19 years, and with higher share of secondary school boys and girls in high school; overweight adolescents more frequently during 11-14*

years with 10.8%, compared with 7.8% between 15-19 years, and more girls in middle school and more high school boys; obese adolescents as a percentage of 0.8% between 11-14 years and 0.7% between 15-19 years, and more girls in middle school and more high school boys. Growth monitoring of children and adolescents by body mass index is the recommendation of WHO experts to stop the epidemic of obesity in the world.

Keywords: *adolescence, anthropometry, BMI*

INTRODUCTION

The correlative anthropometric indexes are associations of measurements, witch is recommended by WHO as the most faithful assessment of nutritional status than direct determinations. Between the correlative indexes that are combinations of height and weight, and with value of obesity index, the most faithful is Body Mass Index (BMI), also called Quetelet Index. BMI can be calculated using diagrams, calculating tables or calculation formulas. BMI measures body weight adjusted for height, but not if the overweight difference was done by excess fatness, muscularity or edema. Therefore, appreciation of body composition is required for nutritional risk assessment [1-3].

Studies carried out in most European countries among children and young adults, in recent years, indicate a general trend towards a less healthy lifestyle and an increased prevalence of overweight and obesity. Increasing prevalence may be accompanied by a multiplication of cardiovascular risk factors even among young people. Clinical data indicate that an increase in total cholesterol concentration, triglyceride, low density lipoproteins (LDL) constitute risk factors for cardiovascular events. High density lipoproteins (HDL) have an antiatheromatous effect and the total cholesterol concentration and the total cholesterol / HDL ratio are effective markers for predicting coronary heart diseases [4-6].

METHODOLOGY

Method

Anthropometry is a unique working method universally applicable, easy to implement and non-invasive.

Height determination. After the age of 3, the measurement is done using the anthropometer, which presents a stationary vertical rod, graded in cm and mm, and a mobile cursor on the rod. The subject barefoot and dressed summary (for observation of body position), is placed on a flat surface (platform of the device), with the weight distributed equally on the 2 legs, heels attached, the line of sight perpendicular to the body, arms free along the body, and direct contact with the vertical plane of the rod: head, back, buttocks, heels. It requires the subject to inspire and to remain in this position of full extension. The cursor is brought to the top of the head. Notation is done in cm and mm.

Weight determination. It is done with people regularly calibrated scales. Subject, dressed summary (cultural reasons), is situated in the center of platform scales, with weight distributed equally on both feet. Notation is done in kilograms and hundreds of grams.
Calculation of body mass index or Quetelet index uses the formula:

$$\frac{Weight\ (Kg)}{Height^2\ (m^2)}$$

It may also be calculated by using normograms and tables.

A BMI in the range 18.50-24.99 corresponds to a normal body weight for height; values below 18.49 indicate underweight; those between 25.00-29.9 indicate overweight; values over 30.00

indicate obesity. BMI values are in accordance with the particulars of the National Center for Health Statistics of the United States (NCHS) and World Health Organization (WHO) [7].

Material
The sample of secondary school students from Timis County totaled 800 students from urban secondary schools and high schools. In the sample, the distribution by gender was equal, 50% (400) for boys and girls. The age of the students enrolled in the study was between 11-14 years, age and sex groups consisting of 100 adolescents.

1.The share of normal weight adolescents (Figure 1)

The sample of high school students in Timis County which has been taken in the study totaled 2908 students from high schools, post-secondary schools and vocational schools in Timis county, urban area. In the sample the distribution by gender was as follows: 51.5% girls and 48.8% boys. The age of students enrolled in the study was between 14-25 years, the largest proportion of adolescents with the age between 15-19 years old, and 98.7%.
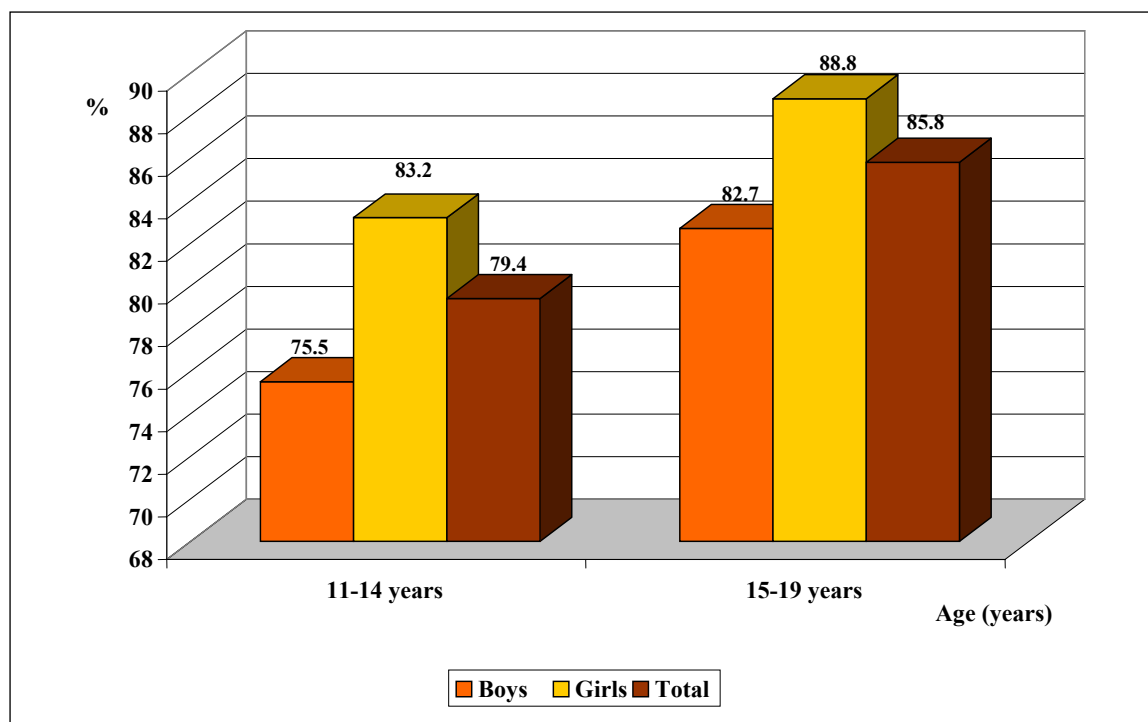
RESULTS AND DISCUSSIONS

Figure 1. Percentage distribution of normal weight adolescents with age of 11-19 years (BMI)

Normal weight adolescents with BMI between 25.00-29.99, assessed by body mass index method, prevail in the period of the studied age, 11-19 years.

Normal weight adolescents are more often between 15-19 years old, 85.8%, compared to the period of 11-14 years with a rate of 79.4%.

Teenage girls are always more frequently normal weighted compared to boys: 83.2% to 75.5% between 11-14 years old, and 88.8% to 82.7% between 15-19 years old.

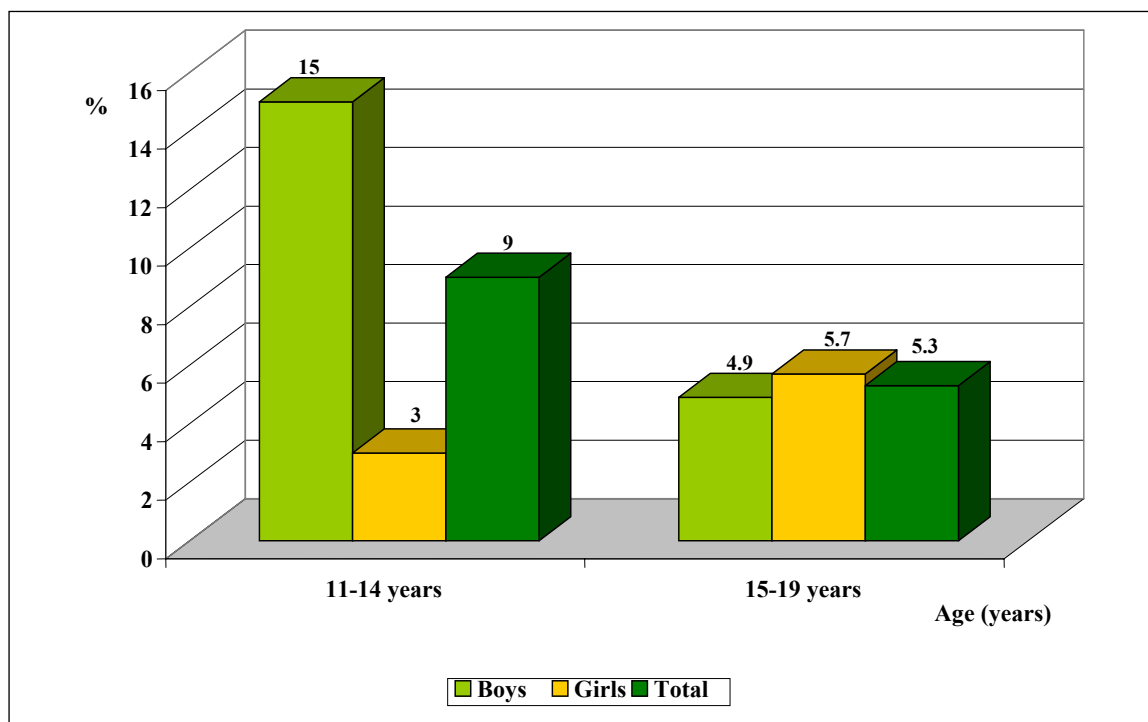**2. The share of underweight adolescents (Figure 2)**

Figure 2. Percentage distribution of underweight adolescents of 11-19 years old (BMI)

Underweight adolescents with BMI below 18.50 are more frequent between the age of 11-14 years, with a rate of 9%, compared to a rate of 5.3% between age of 15-19 years. Underweight boys are 5 times more frequently than girls between age of 11-14 years: 15% to 3%. Underweight girls with age of 15-19 years, compared with boys are more numerous, with 5.7% to 4.9%.

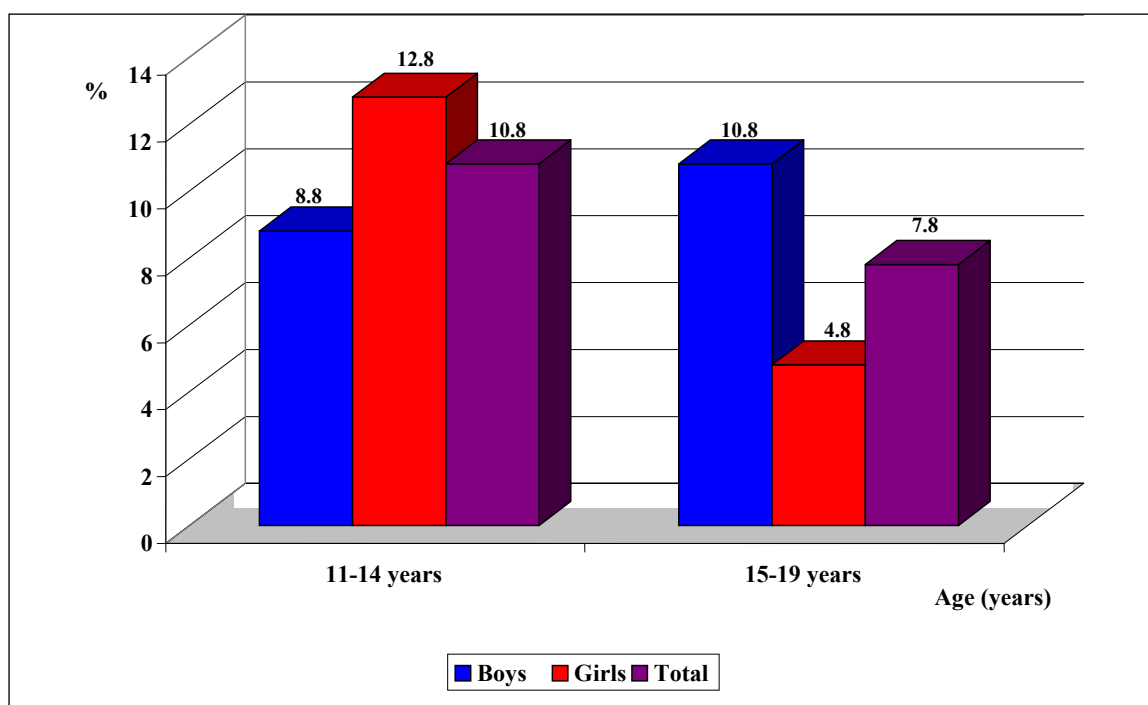**3.The share of overweight adolescents (Figure 3)**

Figure 3. Percentage distribution of overweight adolescents of 11-19 years old (BMI)

Overweight adolescents, with BMI between 25.00-29.99, are more frequent between age of 11-14 years with 10.8%, compared with 7.8% between 15-19 years.

Overweight girls are more frequent than overweight boys between 11-14 years,

12.8% to 8.8%. Boys are more often overweight than overweight girls between 15-19 years, with 10.8% and 4.8%.

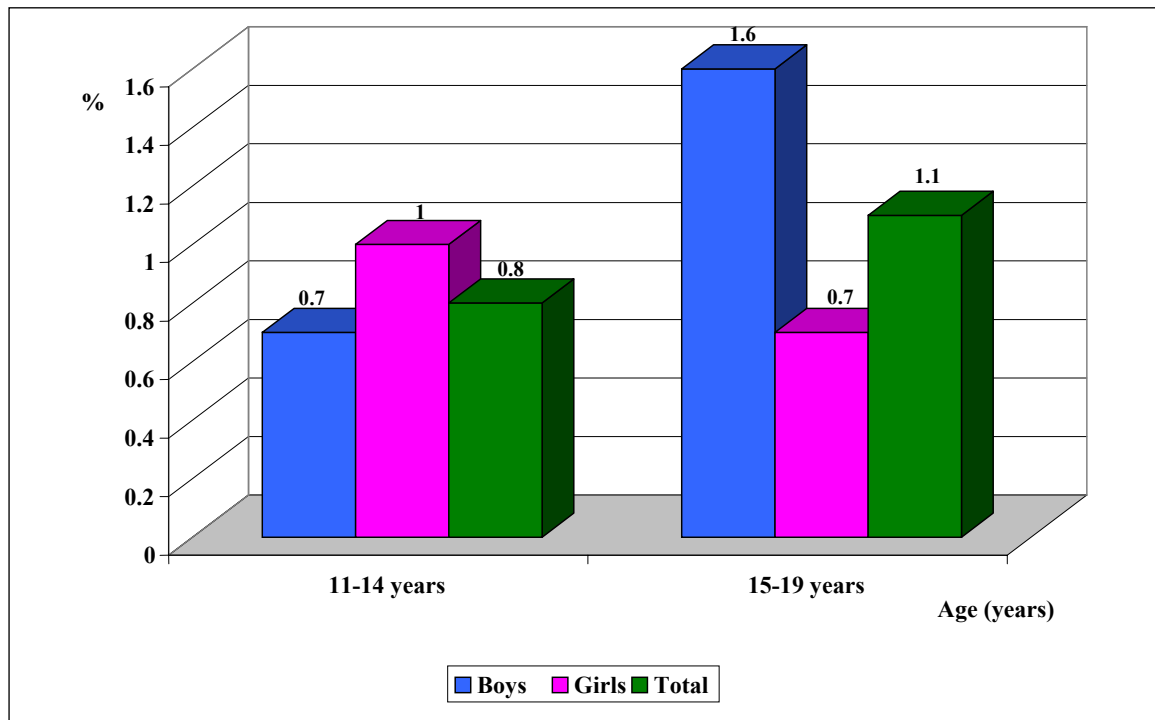**4. The share of obese adolescents (Figure 4)**

Figure 4. Percentage distribution of obese adolescents of 11-19 years old (BMI)

Obese adolescents are a percentage of 0.8% between age of 11-14 years and 0.7% between ages of 15-19 years.

Obese girls are more frequently than obese boys in the range 11-14 years, with 1% to 0.7%. Obese boys are more often than obese girls between ages of 15-19 years, by 1.6% to 0.7%.

Several European studies have shown that groups with low education may have an increased risk for cardiovascular diseases, partly due to an unhealthy lifestyle, compared with groups with a high level of education. Even at the beginning of life, parental education can reduce the risk of developing cardiovascular diseases in adulthood. The relationship between education level and overweight / obesity may be different depending on the economic and cultural values [8].

Studies in northern European countries showed that low parental education was associated with overweight among men with the age of 18 years, recruited in the army. Maternal education was selected as the indicator of socioeconomic status. Since fathers can be seen as role models for young adult men, examining the relationship between father and maternal education, overweight and / or obesity and other risk factors for developing cardiovascular disease among young people is of interest [9,10].

In accordance with a study of National Health and Nutrition Examination (NHANES), United States, 1999-2002, approximately 16% of children and young people with age between 6-19 years were overweight with a body mass index at the

upper limit percentile of 95% [11]. Regarding physical activity, 55.4% of young Americans with age between 14-18 years engage in moderate physical activity, and 35.3% had a vigorous physical activity less than twice a week [12]. Regarding nutrition, less than 40% of the youth respected the dietary guidelines for U.S. regarding saturated fats, 80% do not eat five servings of fruits and vegetables daily and 61% do not respect recommendations for intake of dietary fiber [13]. Young people generally do not respect national recommendations for weight-related lifestyle practices [14].

In a sample of 205 American adolescents, 73% boys, with risk of overweight and poor aerobic shape, it was tested a model using body mass index as mediator in the relationship between lifestyle factors (aerobic fitness determined by oxygen consumption, average physical activity calculated by summing the 7 days of physical activity, diet 24 h) and lipid profile. According to the results, diet low in fat and cholesterol, and proper aerobic training, predicted a decrease of BMI together with

increased high-density lipids and lowered triglycerides and low density lipids. The conclusions made in addition to a better understanding of the interrelations between risk factors that predispose adolescents to coronary heart diseases suggests that improving diet and aerobic fitness will reduce BMI and will lead to a better lipid profile [15,16].

CONCLUSIONS

Multiple studies show the presence and increased frequency of overweight and obesity in children and young people [17]. Among young people is obvious an increase in the number of risk factors that predispose to coronary heart diseases, such as overweight and unhealthy living practices, such as physical inactivity, unhealthy eating habits, tobacco smoking, alcohol consumption [18-20].

Growth monitoring of children and adolescents by using the body mass index is the recommendation of WHO experts to stop the epidemic of obesity in the world.

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SWEETS CONSUMPTION IN ADOLESCENTS FROM WESTERN ROMANIA. EVALUATION OF SOME RISK FACTORS

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REZUMAT

Produsele alimentare zaharoase sunt concentrate, sărace în apă şi foarte bogate în carbohidraţi şi grăsimi, ele constituie o sursă importantă de energie. In adolescenţă această categorie de alimente reprezintă 7-10% din necesarul caloric. Metoda de lucru a fost un studiu populaţional transversal prin folosirea chestionarului CORT 2004 de investigare a unor comportamente cu risc la tineri aplicat pe un lot reprezentativ de adolescenţi din judeţul Timiş, incluzând 2908 elevi, pentru a investiga frecvenţa cu care adolescenţii consumă dulciuri şi rezultatelearată că 40,4% din adolescenţi consumă dulciuri cel puţin o dată pe zi şi mai mult de jumătate din ei, 57,0% consumă frecvent între 1-6 ori pe săptămână. Există diferenţe semnificative între băieţi şi fete în privinţa consumului cu χ2 de 19,90 şi o probabilitate de p<0001, fetele fiind cele care consumă dulciuri zilnic într-o proporţie mai mare, 44,2% comparative cu băieţii, 36,1%. Se observă că rezultatele pot corespunde cu abuzul de dulciuri care pot destabiliza dieta pentru că sunt sărace în nutrienţi esenţiali pentru organism.
     Cuvinte cheie*: adolescenţi, alimentaţie, dulciuri*

ABSTRACT

Sugary food products are concentrated, poor in water and very rich in carbohydrates and often in fat, they constitute an important source of energy. In adolescence, this category of food will be 7-10% of the amount of caloric intake. The working method was a transversal population study, by use of the CORT 2004 questionnaire for the investigation of some health risk behaviors in young subjects, on a representative population of adolescents in Timis County, including 2908 pupils to investigate the frequency with which adolescents consume sweets, and the results revealed that 40.4% of adolescents consumed sweets at least once a

day, and more than half of them, 57.0% have a frequency of 1-6 times a week. By sex, there is a statistically significant difference between girls and boys on frequencies of consumption, with χ2 of 19.90 and a probability threshold of p<0001, girls being those who consumed sweets daily in greater proportion, 44.2%, compared to boys, 36.1%. It notes that the results may correlate with the abuse of sweets which disrupt the diet because, they are poor in essential nutrients for the body.
       ***Key words:** adolescents, alimentation, sweets*

INTRODUCTION

Increased consumption of sugary products is a feature of contemporary human nutrition, through attraction to the organoleptic properties [1].

A large number of studies on adult subjects, children and adolescents, have shown that there is often an inverse relationship between carbohydrate intake and body weight [2,3].

In other words, people who consume a lot more carbohydrates than their energy needs is, in the form of sugar, are generally much fatter than those who do not consume only a small portion of carbohydrates that the body needs [4,5].

MATERIAL AND METHOD

The working method was a transversal populational study, by use of the CORT 2004 questionnaire for the investigation of some health risk behaviors in young subjects, on a representative population of adolescents in Timis County, including 2908 pupils [6,7].

RESULTS AND DISCUSSION

Consumption of sweets at least once a day was recorded at 40.4% (1157) of adolescents, and more than half of them, 57.0% (1637), have consumed between 1-6 times per week.

Only 2.6% (76) of young people don‛t consume sweets, very low percentage, given the low nutritional value of them (Table 1).

Table 1. Distribution of adolescents according to frequency of consumption of sweets in a week

Answers	Frequency	Percent	95% C.I.	
			Minimum	Maximum
2 or more times per day	590	20.6	19.1	22.1
1 time per day	567	19.8	18.3	21.3
4-6 times/week	790	27.5	25.9	29.2
1-3 times / week	847	29.5	27.9	31.2
Never	76	2.6	2.1	3.3
Total respondents	2870	100.0		

Non-respondents: 38

The daily consume of sweets by girls is greater, 44.2% (655), when compared to the boys, 36.1% (500), but the boys' share with an intake of sweets of 1-6 times per week, 61.2% (846), is superior to the girls', 53.1% (788), with the usual (Figure 1).
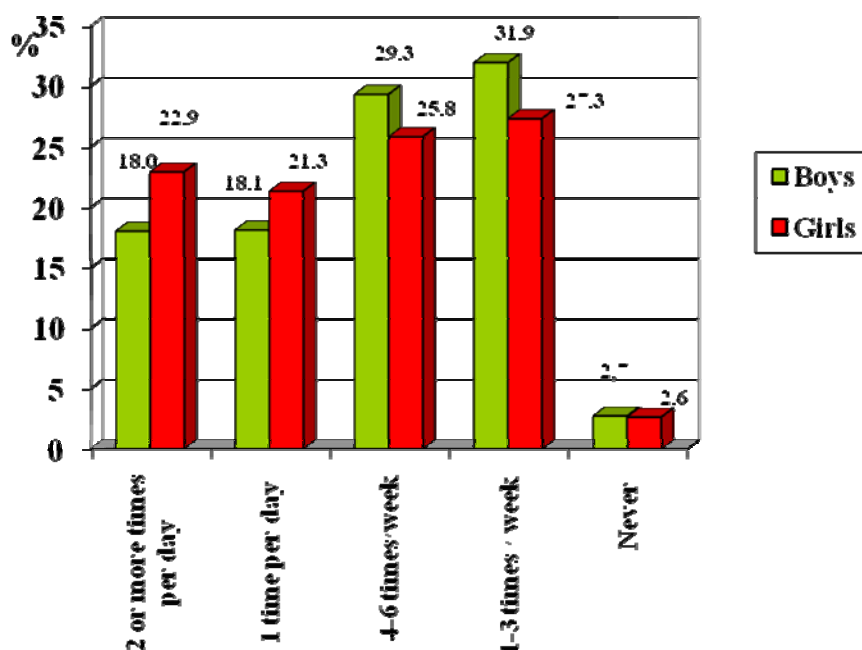
Figure 1. The percentage of boys and girls depending on the frequency of sweets consumption in a week

Regarding the consumption of sweets, there is a statistically significant difference between girls' and boys' frequencies of consumption, with $\chi 2$ of 19.90 and a probability threshold of $p<0.001$.

Evaluation of risk factors for sweets consumption

Predictors for daily consumption of sweets, selected by logistic regression of multivariate analysis, are represented by a series of individual and family factors, the main predictors, depending on the size of the risk (OR>1, p<0.005), as presented in Table 2.

Table 2. Rating key predictor for daily consumption of sweets, depending on the size of risk

Variable	Odd Ratio OR	The threshold for statistical significance p	95% C.I. for OR	
			Minimum	Maximum
The time spent in front of the TV or computer 5 hours/day or more	2.02	<0.001	1.39	2.94
The time spent in front of the TV or computer 4 hours / day	1.85	0.001	1.27	2.69

Spending longer time, 5 hours/day or more in front of the TV or computer is the significant predictor for statistical behavioral model for daily consumption of sweets in adolescents.

CONCLUSIONS

Sweets, food rich in carbohydrates and frequently in lipids, poor in vitamins, lack of food fibers, they are preferred by most teenagers to sensory properties [2].

General contemporary trend of consumer over the hygiene recommendations is associated with risk of the carbohydrate

imbalance, for dental caries and the coefficient for digestive utilization of calcium decreased [1].

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EPIDEMIOLOGICAL AND MEDICO-SOCIAL ASPECTS OF HUMAN HYDATIDOSIS IN TIMIS COUNTY, ROMANIA

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REZUMAT

Introducere: România este una din ţările europene unde E/H e larg răspândită, în special în partea sud-vestică a ţării. Material şi metode: am investigat 199 cazuri de hidatidoză umană diagnosticate în judeţul Timiş între 2000-2005. Datele au fost adunate din registrele spitalelor şi protocoalele operatorii. Rezultate şi concluzii: morbiditatea chirurgicală (i. Mo) pentru hidatidoza umană între 2000-2005 a fost 5.0 0/0000, cu variaţii între 2.9-7.2 0/0000. Adulţii au fost cel mai mult afectaţi (83.9 %) şi dintre aceştia femeile (57.8%). Populaţia rurală a fost afectată în procent de 51.8%. Regiunile corpului predominant afectate au fost ficatul (71.4%) şi plămânii (20.1%) şi rar splina, rinichii, pancreasul, glandele suprarenale, regiunea pleuropericardică, regiunea mediastinală (8,5%). La populaţia tânără s-a găsit o incidenţă mai mare a localizării pulmonare (43.8%), apropiată de cea a localizării hepatice (53.1%). Chisturi multiple au fost raportate în 17.1% din cazuri. În cazurile de chist hidatic hepatic, lobul drept al ficatului a fost mai afectat (45.8%), dar în cazurile de hidatidoză pulmonară, lobii inferiori sunt frecvent afectaţi (37.5%). Complicaţii post operatorii au fost gasite în 26.1% dintre cazurile de hidatidoză hepatică şi în 45% din cele de hidatidoză pulmonară. Media perioadei de spitalizare a fost 19.2 zile per caz, dar în cele cu complicaţii media a fost 27.8.

Cuvinte cheie: echinococoză, genotipuri, E. granulosus, hidatidoză, chist hidatic

ABSTRACT

Introduction: Romania is one of the European countries where E/H is widespread, especially in south-western part of the country. *Material and Methods:* We investigated 199 cases of human hydatidosis diagnosed between 2000-2005 in the Timis County. Data were collected from hospital records and surgery protocols. *Results and Conclusions:* The surgical morbidity rate (i. Mo) for human hydatidosis during 2000-2005 was 5.0 0/0000, with variations between 2.9-7.2 0/0000. Adults were most affected (83.9 %) and of these females (57.8%). Rural population was affected by 51.8%. Predominantly affected areas of the body were the liver (71.4%) and the lung (20.1%) and rarely the spleen, kidney, pancreas, suprarenal glands, pleuropericardic region, mediastinal region (8,5%). In young population has been found larger incidence of localization in lungs (43.8%), close to the hepatic localization (53.1%). Multiple cysts were reported by 17.1% of cases. In cases of hydatid liver cysts, the right lobe of the liver was more affected (45.8%), but in cases of lung cysts, the inferior lobes are frequently affected (37.5%). Post-operative complications were found in 26.1% of the cases with hepatic hydatidosis and in 45% of the ones with lung hydatidosis. The average hospitalization period was 19.2 days per case, but in cases with complications, the average was 27.8.
Key words: echinococcosis, genotypes, E. granulosus, hydatidosis, hydatic cyst.

INTRODUCTION

Echinococcosis is a zoonotic infection caused by adult or larval (metacestode) stages of cestodes belonging to the genus Echinococcus and the family Taeniidae.
At present, four species of Echinococcus are recognised, namely Echinococcus granulosus, E. multilocularis, E. oligarthrus and E. vogeli.

The eggs are highly resistant to environmental factors and can remain infective for many months or up to about 1 year in a moist environment at lower ranges of temperatures (about +4 °C to +15 °C). Eggs of Echinococcus are sensitive to desiccation. At a relative humidity of 25 %, eggs of E. granulosus were killed within 4 days at 0% within 1 day. Heating to 60 °C – 80 °C killed eggs of E. granulosus in less than 5 min. On the other hand, Echinococcus eggs can survive freezing temperatures [1-3].

The intermediate hosts, represented by a wide range of mammals, acquire the

infection by the ingestion of eggs. Following the action of enzymes in the stomach and small intestine, the oncosphere is released from the keratinized embryophore [4].

A number of intraspecific variants or strains are known to occur within the species E. granulosus [5-7]. The term 'strain' is used to describe variants which differ statistically from other groups of the same species in gene frequencies, and in one or more characters of actual or potential significance to the epidemiology and control of echinoccoccosis. In many cases, these variable forms of E. granulosus have been studied in detail and shown to differ in a variety of morphological features and life-cycle characters [6].

Analysis of DNA has been used to categorize variants of E. granulosus into

distinct genotypic strain groups; to date, 9 genotypes (G1-9) have been identified and this categorization follows very closely the pattern of strain variation emerging based on biological characteristics [8,9].

Romania is one of the European countries where E/H is widespread, especially in south-western part of the country.

MATERIAL AND METHODS

We have investigated 199 cases of human hydatidosis diagnosed between 2000-2005 in the Timis County. Data were collected from hospital records, surgery protocols, from the Statistics Center and the Department of Public Health of the county.

RESULTS AND DISCUSIONS

Timis County is located in western part of Romania, with a surface area of 8,697 km2. The landforms are diverse, plain in the western and central area, hills in the eastern area, bounded by mountains. In the rural area many high-capacity farms for livestock breeding (cattle, pigs, sheep and goats) have been developed.

We can report a slightly decrease in the number of cases in the last few years in Timis county (Figure 1 and Table 1).
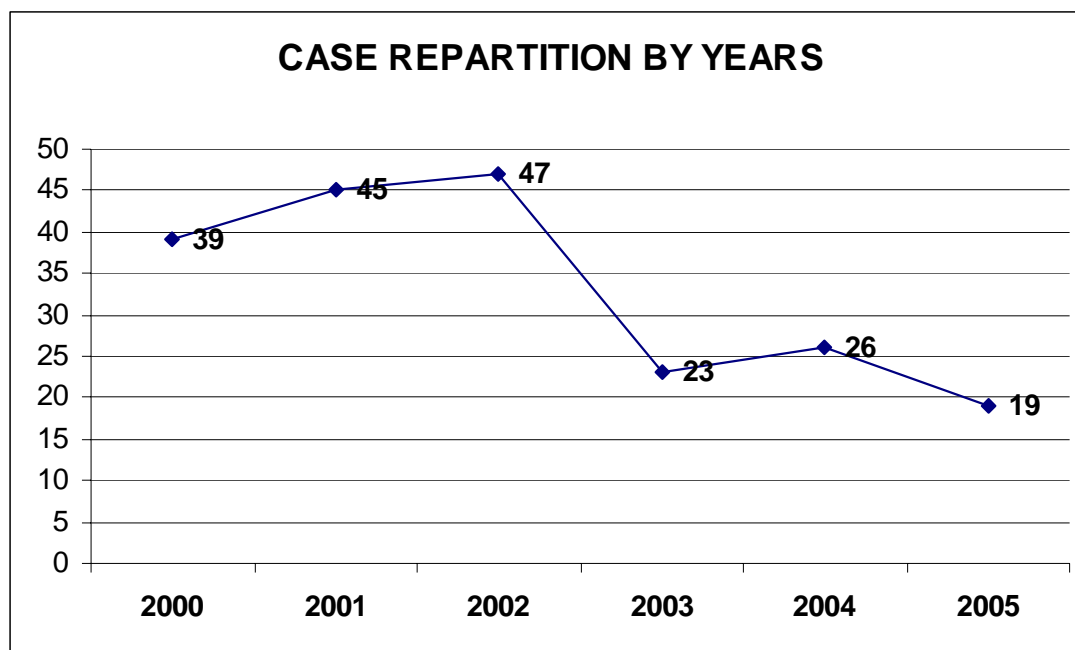

Figure 1. Case repartition by years

The surgical morbidity rate (i. Mo) for human hydatidosis during 2000-2005 was 5.0%$_{000}$, with variations between 2.9-7.2%$_{000}$ as we can see in Table 1.

Table 1. Surgical morbidity rate

Year	No. of inhabitants	No. of cases	I. Mo
2000	673.942	39	5.8 %$_{0000}$
2001	674.985	45	6.7 %$_{0000}$

2002	656.418	47	**7.2 %**$_{0000}$
2003	655.632	23	3.5 %$_{0000}$
2004	655.718	26	4.0 %$_{0000}$
2005	655.680	19	**2.9 %**$_{0000}$
Total:	3.972.375	**199**	**5 %**$_{0000}$

Adults were most affected (83.9 %) and of these females (57.8%) as in Figure 2 and Figure 3.
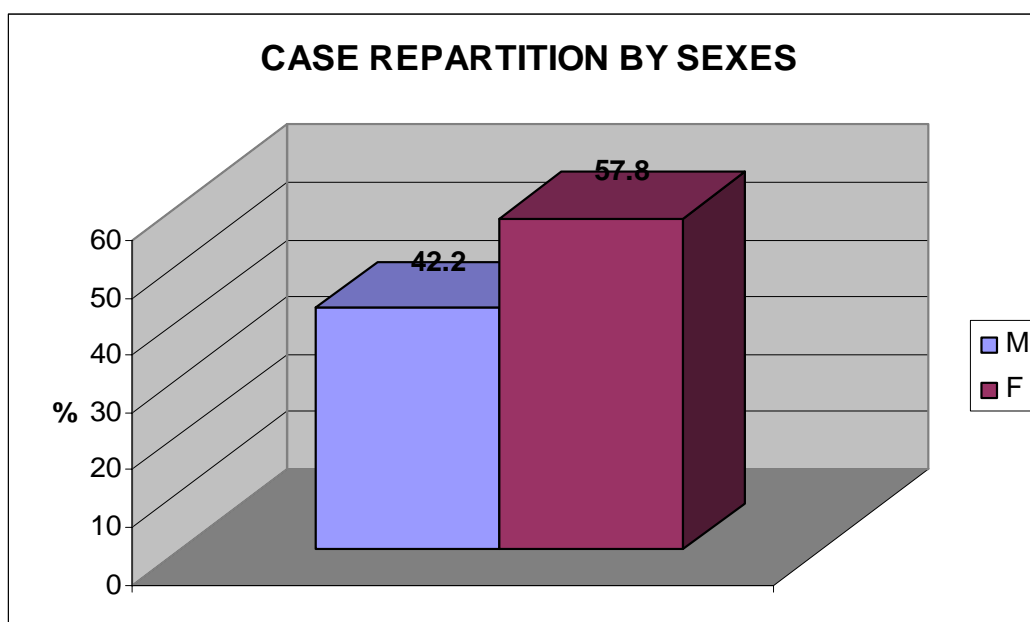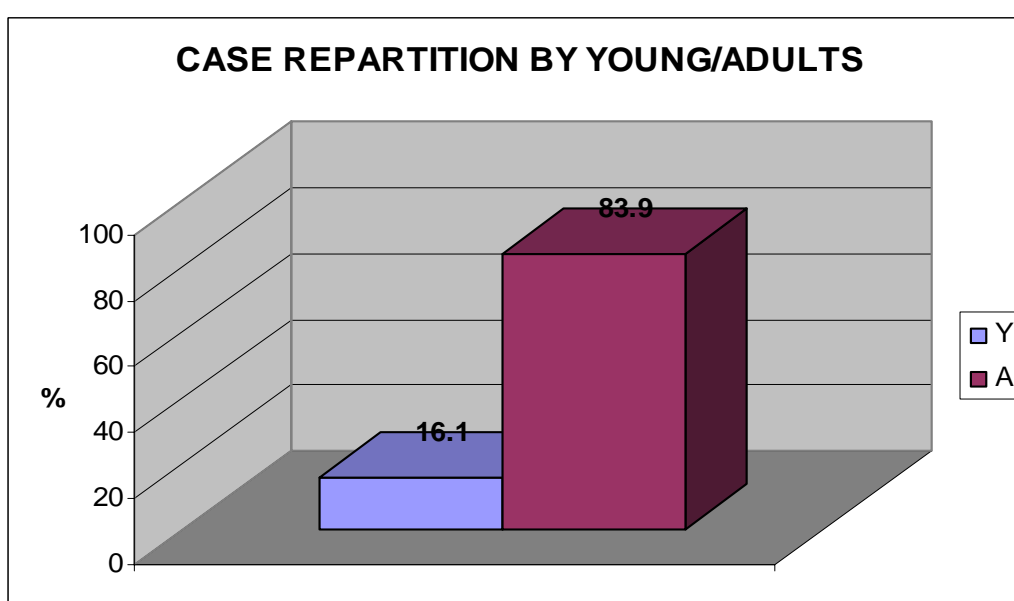

Figure 2. Case repartition by sexes

Figure 3. Case repartition by young/adults

In Table 2 we can see the case repartition by age groups.

Table 2. Case repartition by age groups

Age group	No. of cases	%
0-3	0	0
4-6	7	21.9
7-12	7	21.9
13-19	18	56.2
TOTAL Young Population	**32 (16.1 %)**	**100**
20-29	30	18
30-39	28	16.7
40-49	30	18
50-59	40	24
more than 60	39	23.3
TOTAL Adults	**167 (83.9 %)**	**100**

Rural population was affected by 51.8%, slightly more than urban population (Figure 4).
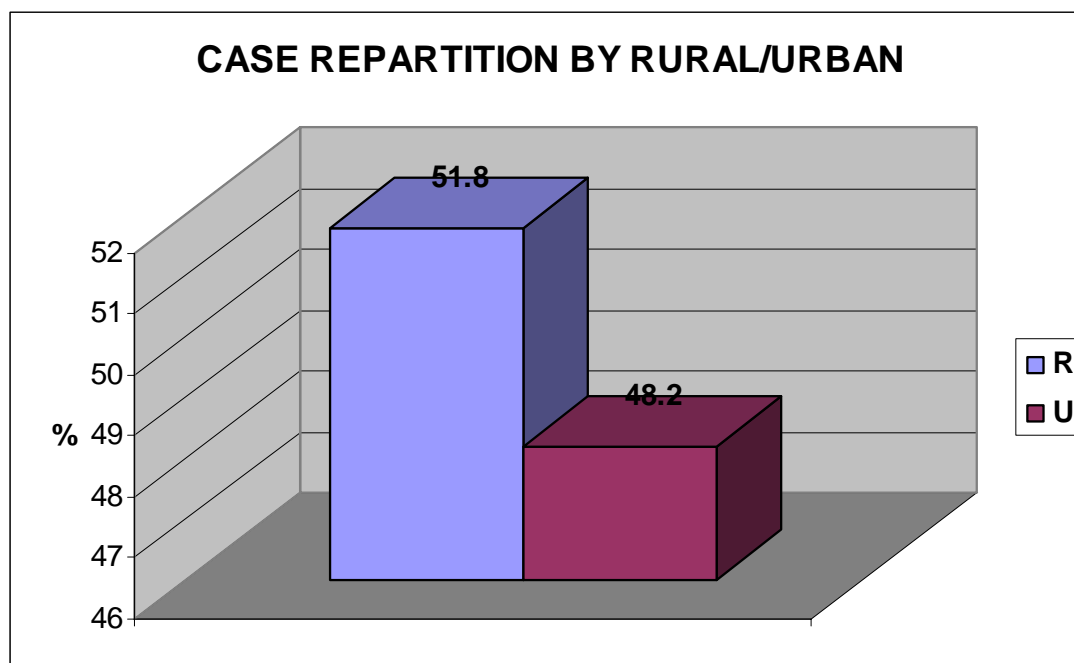
Figure 4. Case repartition by rural/urban

Predominantly affected areas of the body were the liver (71.4%) and the lung (20.1%) and rarely the spleen (2%), kidney (1.5%), pancreas (0.5%), suprarenal glands (0.5%), pleuropericardic region (0.5%),

mediastinum (0,5%). We also found 5 cases (2.5 %) of secondary hydatidosis (Table 3).

Table 3. Distribution by organs

Localisation	No. of cases	%
Liver	142	**71.4**
Lung	40	**20.1**
Spleen	4	2.0
Kidney	3	1.5
Retroperitoneal space	2	1
Peritoneal	2	1
Liver + Lung	2	1
Pancreas	1	0.5
Suprarenal glands	1	0.5
Pleuropericardic	1	0.5
Mediastinum	1	0.5
TOTAL	**199**	**100**
Secondary Hydatidosis	**5**	**2.5**

In young population a larger incidence has been found in lungs (43.8%), close to the hepatic localization (53.1%) – Figure 5.
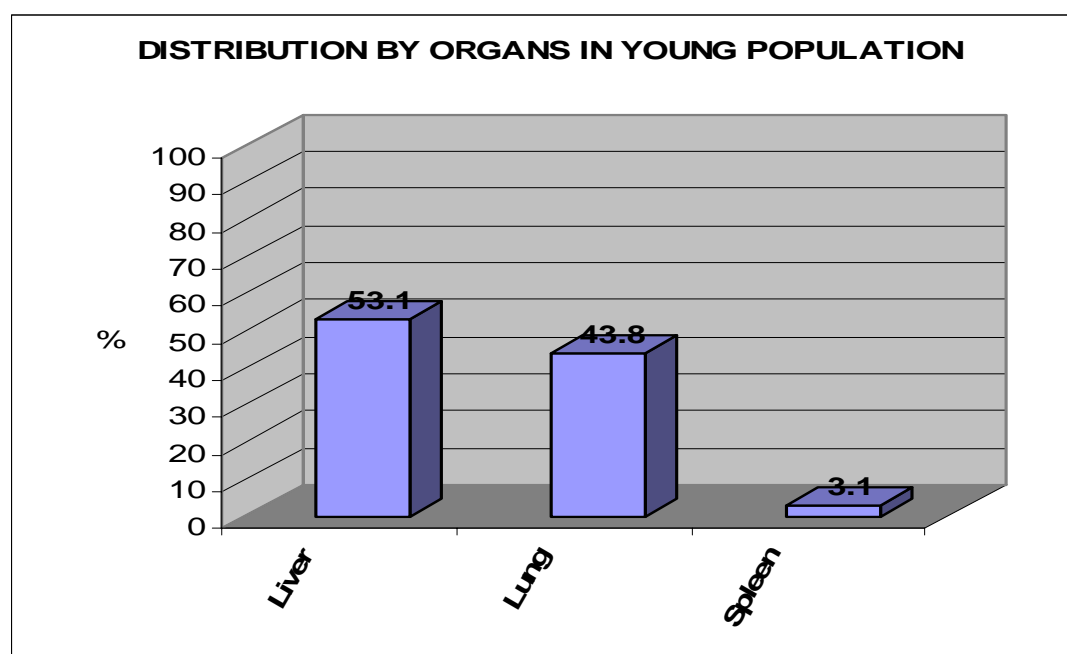
Figure 5. Distribution by organs in young population

In cases of hydatid liver cysts, the right lobe of the liver was more affected (45.8%), but in cases of lung cysts, the inferior lobes are frequently affected (37.5%). We can follow the distribution of hepatic and pulmonary

hydatid cyst on segments of organs in Table
4.

Table 4. Distribution by segments of organs

ORGAN	SEGMENT	n	%
LIVER	Right lobe	65	**45.8**
	Left lobe	35	24.6
	Bilateral	14	9.9
	Undetermined	28	19.7
TOTAL Liver		**142**	**100**
LUNG	Right Superior lobe	7	17.5
	Right Middle lobe	2	5
	Right Inferior lobe	13	**32.5**
	Left Superior lobe	4	10
	Left Inferior lobe	2	5
	Bilateral	6	15
	Undetermined	6	15
TOTAL Lung		**40**	**100**

Multiple cysts were reported by 17.1% of
cases (Figure 6).
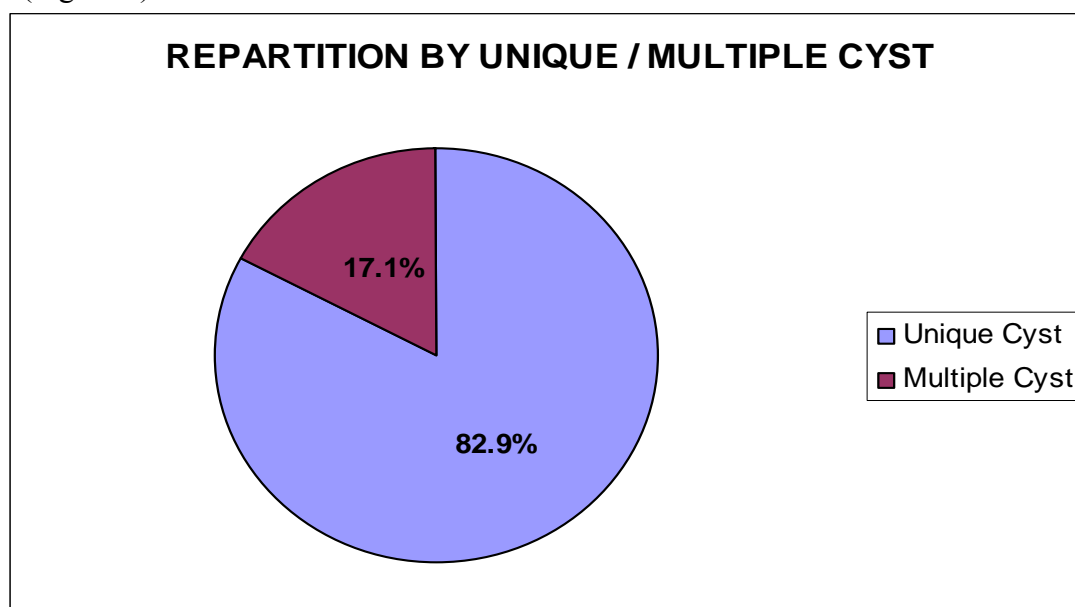
Figure 6. Repartition by unique/multiple cyst

Post-operative complications were found in
26.1% of the cases with hepatic hydatidosis
and in 45% of the ones with lung
hydatidosis (Figure 7 and Figure 8).

Complications of liver hydatid cyst: 142
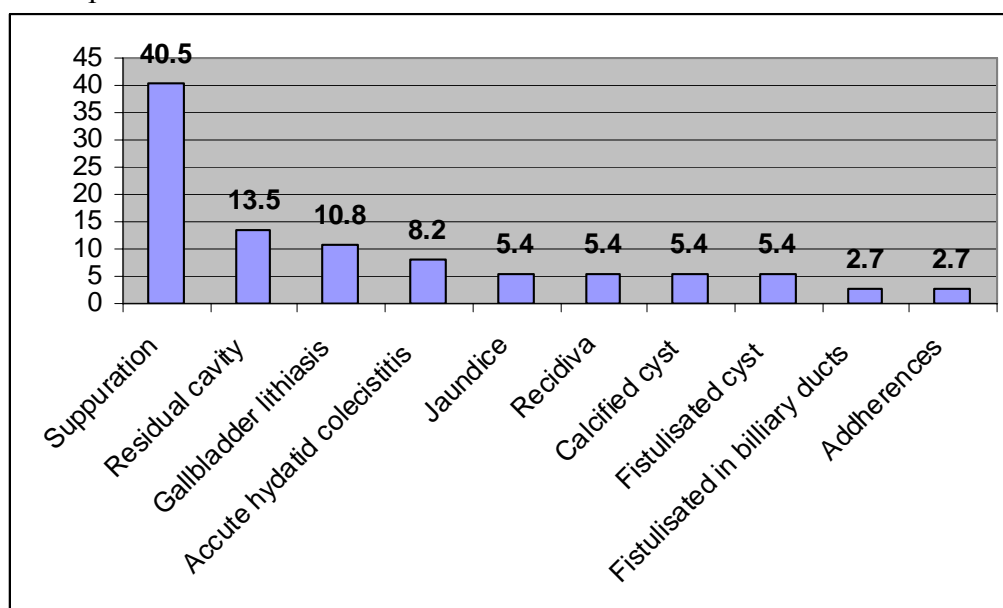cases: 37 complicated.

Figure 7. Complications of liver hydatid cyst

Complications of lung hydatid cyst: 40
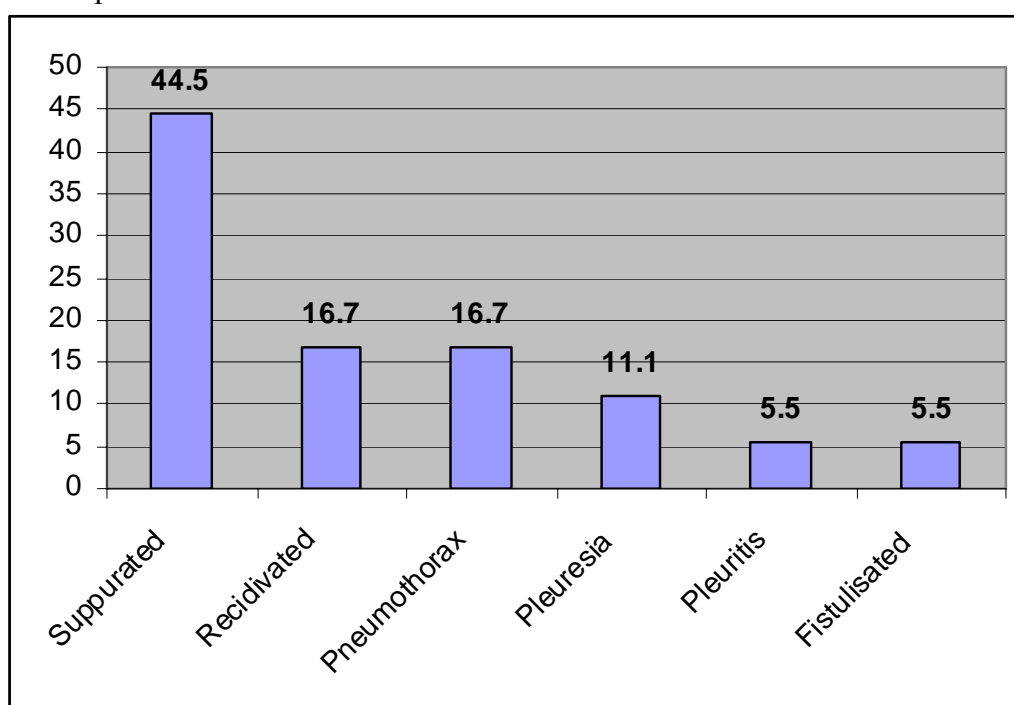cases: 18 complicated.

Figure 8. Complications of lung hydatid cyst

The average hospitalization period was 19.3 days per case, but in cases with complications, the average was 27.8 (Table 5).

Table 5. Hospitalisation period

CASES	HOSPITALISATION DAYS	n	AVERAGE
COMPLICATED	1668	60	**27.8**
UNCOMPLICATED	2182	139	15.7
TOTAL	3850	199	**19.3**

In 11.1% of the cases were required two hospitalizations and in 1% three hospitalizations, respectively (Figure 9).
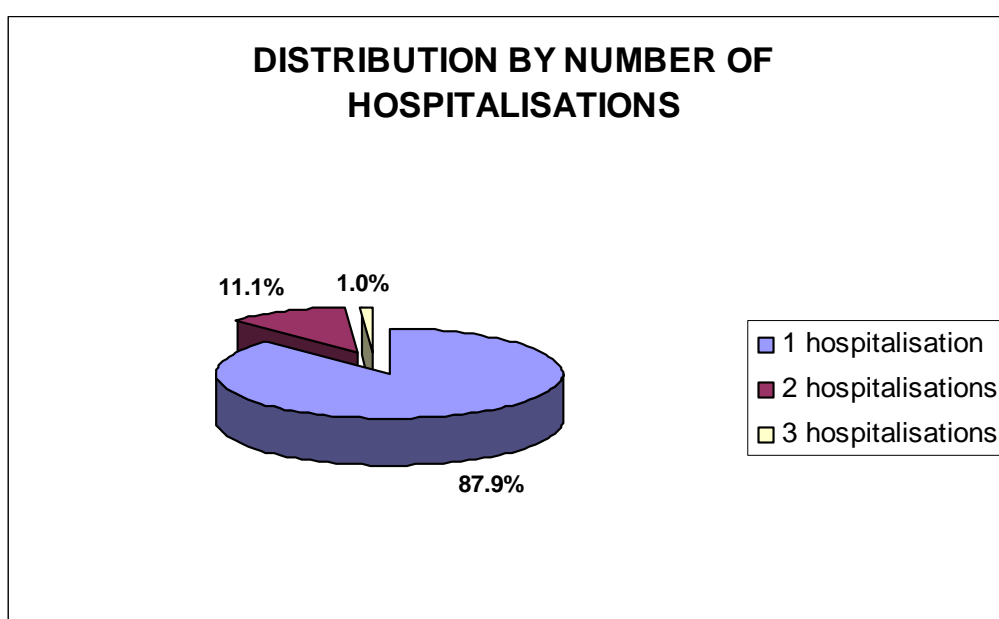

Figure 9. Distribution by number of hospitalisations

CONCLUSIONS

Our opinion is that in western part of Romania the epidemiologic process of E/H

is active. Thus, ongoing fight and control measures have to be put in place.

Control measures against the E. granulosus infection in dog populations are the basis for prevention of cystic echinococcosis in humans.

In endemic areas, population-screening by serology must be used for early detection of cases. This can reduce morbidity and mortality considerably.

Education is also an essential part of prevention and control of echinococcosis [10].

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FOOD AND QUALITY STANDARDS

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REZUMAT

Alimentele sunt produse naturale de origine vegetală sau animală (produse agro-alimentare) cât şi produse obţinute prin prelucrarea celor naturale. Ele îndeplinesc funcţia de nutriţie prin conţinutul în trofine şi nu sunt dăunătoare consumatorilor umani. Normele de calitate, exprimate sau implicite, sunt formele de consemnare a indicatorilor de calitate: nutritivi, igienici, satisfacerea plăcerii consumului de alimente. Riscurile biologice sunt reprezentate de bacterii, virusuri şi paraziţi. Riscurile chimice se referă la diferite substanţe chimice cu potenţial toxic care sunt conţinute în mod natural în unele alimente sau substanţe cu care alimentele vin în contact în circuitul lor. Riscurile fizice înseamnă particule fizice de diferite naturi şi dimensiuni care nu ţin de compoziţia alimentelor şi care pot duce la rănirea sau îmbolnăvirea consumatorilor. Dreptul consumatorului la protecţia stării de sănătate obligă organele de control autorizate să dispună scoaterea din consum a alimentelor cu proprietăţi calitative necorespunzătoare.
     Cuvinte cheie: *alimente, norme de calitate, riscuri biotice şi abiotice*

ABSTRACT

Foods are products of vegetal and animal natural origin (agro-alimentary products) and products obtained from the processing of natural products. They have nutritional functions due to the trophic substances and do not pose threat to human health. Expressed and implied quality standards are the recorded quality indicators: nutritional, hygienic, and the satisfaction of consuming. Biological risk is represented by bacteria, viruses, and parasites. The chemical risk are represented by chemical substances that pose toxic threat and are natural contained in some foods or substances that take contact with the food during processing operations. Physical risk is composed of particles of different sources and dimensions, not linked to the food's composition and which can harm or sicken the consumers. The consumer's wrights for health protection are obliging the authorized control agency to withdraw from the use the food with unsuitable properties.
     Key words: *food, quality standards, biological and non-biological risk*

FOOD AND QUALITY STANDARDS - DEFINITIONS

Foods are products of vegetal and animal natural origin (agro-alimentary products) and products obtained from the processing of natural products. They have nutritional functions due to the trophic substances and do not pose threat to human health [1].

The quality of foods is given by the nutritional and hygienic characteristics. Expressed and implied quality standards are the recorded quality indicators: nutritional, hygienic, and the satisfaction of consuming [2,3].

The quality characteristics are gathered in documents that are intended to become laws, standards and product specifications [4-6]. The un-obedience to these rules is considered crimes and is a source of penalties.

At the reception of the raw materials the quality certificate is required and the parameters determined in the own laboratory of the economic agent, or in the specialized, neutral laboratory if the economic agent does not have one of their own are being verified.
The quality certificate is the guarantee of the supplier to the user that the food is corresponding to the requirements of the country's standards.

QUALITY STANDARDS FOR FOOD IN ROMANIA

The marketing and human consume are forbidden if the food has one or more of the characteristics described below:
- organoleptic signs of alteration – the modification of aspect, color, consistency, taste and smell
- signs of parasite infestation (eggs, larvae, adults alive or dead) or signs of their presence or activity excepting some products for which there are limits stipulated in the hygienic-sanitary standards

- signs of rodents
- smell and taste different from the nature of the products
- smell, taste, or spots of molds, excepting selected admitted in the production processes
- contain food additives unapproved by the Ministry of Health or are above the limits accepted by the hygienic-sanitary standards.

- contain contaminants above the limits admitted by the standards
- contain foreign bodies above the limits admitted by the standards
- are being produced by technologies unapproved by the Ministry of Health
- are being produced from raw materials unapproved by the Ministry of Health
- are not as required by the standards or the product specifications
- are forged

The forging implies:
- adding into products natural or synthetic substances with the purpose of hiding some defects, modification or conferring properties that the natural composition of the products or the fabrication recipes do not justify
- changing the composition without changing the label specifications[7].

ASSOCIATED RISK FOR FOOD

Biological risk

Biological risk is represented by bacteria, viruses, and parasites. Biotical pathogen or conditioned pathogen elements cause illness after consuming to the humans.
More frequent, the biological risks are represented by:
• bacteria involved in food poisoning:
- Staphylococcus
- Streptococcus
- Listeria

-      Bacillus cereus
-      Clostridium botulinum, Clostridium welchii
-      Salmonella
-      Proteus
-      Vibrio parahaemoliticus
-      Campylobacter jejuni, Campylobacter coli

- •   Bacteria causing transmissible bacterial diseases:
-      Salmonella typhi, Salmonella paratyphi A, B
-      Shigella flexneri, Shigella sonnei
-      Vibrio cholarae, Vibrio eltor
-      Mycobacterium tuberculosis
-      Brucella melitensis, B. suis, B. abortus
-      Bacillus anthraces
-      Leptospira icterohaemorragiae, L. pomona
-      Francisella tularensis

- •   Viruses of human or animal origin
-      Hepatitis A virus
-      Poliovirus homini
-      Coxsackie virus
-      Echo virus
-      Aphthic Fever Virus

- •   Geo-helminthes
-      Ascaris lumbricoides
-      Trichuris trichura
-      Strongiloides stercoralis

- •   Bio-helminthes
-      Trichinella spiralis
-      Taenia solium, T. saginata
-      Diphyllobothrium latum
-      Fasciola hepatica

- •   Protozoa
-      Toxoplasma gondii
-      Lamblia intestinalis [15-20].

Chemical risk

The chemical risk are represented by chemical substances that pose toxic threat and are natural contained in some foods or substances that take contact with the food during processing operations.

Consuming food that contains toxic substances can determine immediate acute intoxications or late effects by accumulation in different tissues or organs of human body.

- •   Natural chemical substances
-      Alphatoxin
-      Scombrotoxin
-      Toxins from mushrooms
-      Toxins from shellfish
-      Toxins from fish and seafood
-      Pirolizidinic alkaloids
-      Phytohaemaglutinins
-      polychlorinated phenols

- •   Added chemical substances
-      Chemical substances used in agriculture and in zootechnic sector (pesticides, fungicides, insecticides, fertilizers, hormones for growth, antibiotics, antihelminthes)
-      Toxic metals and their salts (lead, zinc, arsenic, mercury, cyanides)
-      Alimentary additives above admitted limits
-      Substances from the technological machines
-      Forging substances [21-24].

Physical risk

Physical risk is composed of particles of different sources and dimensions, not linked to the food's composition and which can harm or sicken the consumers.

The materials considered physical risk for food are:

-      glass from glass wrapping, light lamps, tools, displays from the measuring devices
-      wood from wooden boxes, pallets, floors
-      stones from constructions, floor,
-      metal chips from machines

- plastic from wrappings, personal items of employees [25].

Food additives

Food additives are substances foreign from natural or synthetic food composition, with or without nutritional value, that are added to food's composition in any step of production using special recipes for maintaining or the improvement of the foods qualities, favoring some technological processes, increasing the validity of storage [8].

Health requirements for food additives:
   - to be authorized
   - their use to be necessary and not to cause any risks
   - not to have any toxic effects on the users or their descendents
   - the degree of purity to be established by standards
   - to generate the effects in low concentration
   - not to destroy the nutritive components of food
   - not to mask preexistent qualitative defects
   - not to substitute a component from the basic composition of food
   - not to deteriorate the aliment
   - not to make toxic complexes during processing or storing
   - not to inactivate the action of other additives used to the same aliment
   - to exist concluding methods for identifying and dosing in foods
   - to be specified on the packaging in order to respect the information wrights of the consumer and to give the opportunity to accept or reject the product

The Romanian legislation foresees the following categories of additives:
   - preservatives, substances that prologue the period for storing of food

Romanian laws are aligned to the European Union requirements.

giving protection over the alteration from microorganisms
   - antioxidants, substances that prologue the period for storing of food giving protection over oxidation (rancid, color changing, etc.)
   - acidification agents, substances that increase the acidity of a produce, some even changing the taste into sour.
   - Tampon substances used for the food's specific pH regulation
   - Anti-frothy, substances used to avoid the production of frothy
   - Emulsifiers, substances used for forming and maintaining an homogenous mixtures
   - Gellifying, substances that allow the gels formations
   - Sequestrant, substances that are forming stable chemical complexes with the metallic ions
   - Stabilizers, substances that maintain the physical-chemical properties of food, maintaining the homogeneity and the color of dispersion
   - Thickness agents, substances that are increasing the viscosity of food
   - Sweetening agents, substances, different from sugar that are used to confer a sweet taste to food
   - Natural and synthesis colorants
   - Raising agents, substances that contribute to increasing in the food volume without altering the energetic value and anti-agglomerating agents that reduce the tendency of individual particles to adhere to each other
   - Taste and aroma potentation that maintain and amplify the specific aroma of food
   - Support substances that facilitate the transport and utilization of additives without the modification of proprieties
   - Enzymes
   - Natural aromatizers, identical natural substances and artificial substances [8,9].

Food additives included in EU list are codified with the letter "E" from Europe, followed by a special number for each additive. Codifying allows the consumers from EC to recognize the additives and to be assured that the used additives are approved by the EC [10,14].

The maximum quantities accepted for each additive can be expressed as follows:

- Acceptance daily intake is the estimate quantity from an additive reported to body weight and time that can be consumed throughout the life without any health risk (mg of additives/kg and day)

- Maximum admitted dosage represents the daily consume divided to a safety factor of 100, reaching a supplementary precaution that eliminates any risk from consuming several foods during the same day (mg of additives/kg and day).

Maximum and minimum quantities are revised periodically [11].

QUALITATIVE DEFICIT FOOD DISPERSAL METHODS

The withdrawal from consumption

The consumer's wrights for health protection are obliging the authorized control agency to draw from the use the food with unsuitable properties. It is of a great importance the identification of these foods and the application of corrective measures.

The profound altered foods can be easily detected by organoleptic examination without the necessity of collecting samples or laboratory examination.

In less concluding situations, food samples are collected and the food stock is blocked until the laboratory analyzes are available. If the suspicion is confirmed, the foods will be withdrawn from consume.

The withdrawn from consume is accompanied by a record containing the destination, which can be: the zootechnic sector for animal feeding with the veterinarie's agreement; raw material for other industries than food industry; incineration [25].

The destruction of altered food

The following steps will be performed:

- the physician establishes the destruction date; the destruction can be postponed a limited amount of time if the following conditions are fulfilled: the possibility to store the products without treat for public health; possibility to isolate from other products, vectors; the treatment of the produces with powerful smelling substances and colored substances, the treatment with chlorine for dezinfection

- the cost of destruction is paid by the owner of the food

- the incineration of the stock of foods in crematoria, in the presence of the medical officer and owner

- the creation of a record containing: data regarding the food (commercial name, quantity, reasons for destruction) and the owner; the name and training of the medical officer that ordered the destruction; date and place of destruction [25,26].

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ACUTE HEPATITIS C VIRUS - A REAL HEALTH PROBLEM FOR ALL AGES

Gaşpăr R. D.

Activity carried out in the Emergency County Hospital from Timisoara

REZUMAT

Infecţia cu virus hepatic "C"(VHC) rămâne o problemă majoră de sănătate publică la scară planetară. Se estimează că în România prevalenţa infecţiei cu virus hepatic C se situează la circa 4,9% din populaţia generală. VHC la fel ca şi HIV sau virusul hepatic B (VHB) îşi perfecţionează permanent genomul şi cu fiecare replicare apar specii noi cu performanţe virale superioare, acest lucru face să asistăm la o cursă contra cronometru între rapida evoluţie a viruşilor şi puterea de contracarare a laboratoarele de cercetări medicale umane. Prin lucrarea de fata imi propun sa amplific ideea pentru care hepatita cu virus c nu are varsta, motiv pentru care datele recente arată că în absenţa unui vaccin şi a unui tratament antiviral eficace, situaţia epidemiologică se va inrautăţi în viitor, nu numai sub aspect cantitativ dar şi prin selectarea unor genotipuri VHC cu potenţial lezional şi rezistenţă terapeutică crescută; astfel încât tot mai mulţi oameni decedează nu cu, ci din cauza infecţiei VHC.
Cuvinte cheie: virusul hepatitic c, genotip, situatie epidemiologica,pcr,investigatii biochimice

ABSTRACT

The infection with the hepatitis C virus (HCV) remains a major problem on a large scale for the public health. It is estimated that in Romania the infection with hepatitis C virus is around 4.9% of the general population. HCV as well as HIV or hepatitis B virus (HBV) is constantly improving its genome and with each replica new species appear with superior viral performances. Thus we assist at a time trial between the rapid evolution of the viruses and the power counteract of the laboratories of human medical research. In the present paper we intend to develop the idea that hepatitis C virus has no age, reason for which the recent information show that in the absence of an efficient vaccine and antiviral treatment, the epidemiologic situation will worsen in the future, not only quantitatively but also regarding the selection of some HCV genotypes with a potential against lesions and with a high therapeutic resistance. Thus more and more people die not with, but because of the HCV infection.
Keywords: hepetitis c virus, genotype, epidemiologic situation, pcr, biochemical investigations

INTRODUCTION

The hepatitis C virus infection (HCV) remains a major problem on a large scale for the public health [1,2]. It is estimated that 180-200 million people from around the world are infected with HCV and from these, 75-80% remain infected for a long period of time, with a quota of 40%-60% of transformation into chronic hepatitis (C.H.) at 12-15 years old, of 20% into hepatic cirrhosis (H.C.) at 15-20 years old and of 2% - 3% into hepatocelular carcinoma (H.C.C.) at 20-25 years [3-5].

The C viral infection is characterized by high variations of geographical and temporal distributions, concerning the incidence and the predominance, which depend mostly on the already existent differences due to the risk factors that contribute to the infection transmission. Even though the predominance of the infection onto the general population is not very known yet, a few areas of endemic malady are identified:

> ➢ reduced (<2%): Great Britain, Scandinavian countries (0,1%-0,5%), countries from West of Europe, U.S.A. (2%), Australia (0,4%), Canada (0,4%-1,4%)
> ➢ average (2%-5%): Eastern Europe, Mediterranean Sea Area, Brazil, Middle East, India, China, Moldova, Romania
> ➢ high (>5%): Egypt (20%), Syria (7%)[DAVIS, LOHMAN 2005].

It is estimated that in Romania, the predominance of the hepatitis C virus is around 4.9% on the general population.

The acknowledgement of the danger of HCV infection came rather late and must not surprise or lead to panic. Ignoring or on the contrary exaggerating the biological and social impact of HCV produces as much damage as the infection itself.

The hepatitis C virus is a virus that is transmitted through blood and which lives in the dried blood more that other viruses, sometimes even up to 3 months. It enters into the body through parenteral path, the place for the viral replica being represented by the hepatic cell [8-13].

It has been established that in the last years the paths of transmitting the HCV infection have changed in most of the geographical areas. In order to be spread, the HCV infection needs a source of infection, a transmission path and a receptive mass. The sources of infection are represented by the viremic subject (ill person/blood donor) [14]. At the moment, the number of infections through blood and produced in blood, surgical maneuvers or parental treatments has decreased. The rate of infection by using injectable drugs, piercing, tattooing and acupuncture as well as through dental paths is growing continuously, affecting especially the young people among the population exposed to these maneuvers in poor hygienic conditions [15].

The receptive mass is very rare, identifying in it groups of population with a risk: medical/paramedical staff from the public and private institutions, drug addicts, persons that receive blood or organs, persons with talasemia, hemophilia, heart surgeries, kidney transplantations, hemodyalisis [16-18].

The hepatitis C virus has been discovered by Q. L. MOO (1988) and M. Hantington (1989) from the Emeryville laboratories, California, in collaboration with B. Bradley from CDC-Atlanta [19].

Using molecular cloning techniques, they have discovered HCV to the chimps infected with the serum from the ill persons with non A, non B hepatitis [20]. HCV is a RNA linear virus, monocatenary, with a positive polarity, made of 9500 nucleotides, whose genome is organized similarly to the flaviviruses and pestiviruses. From the

taxonomia point of view, the hepatitis C virus (HCV) pertains to the genus of Hepacivirus from the Flaviviridae family that includes the classic flaviviruses such as yellow fever virus, BVDV (bovine viral diarrhea virus) or the viruses GB (10) [21]. It has a spherical shape with extremely small dimensions (40-60 nm); representing its own genus in the family of Flaviviridae. The physical and chemical properties of the virus have been determined by cloning molecularly the genome, cultivated on E. Coli. The virus becomes inactive when treated with a solution of formaldehyde in proportion of 1:1000, at a temperature of 370C during 36 hours, pasteurized at 600C-10 hours, and heated at a temperature of 1000C for 45 minutes [22].

HCV demonstrates an amazing genetic diversity, with a broad implication in diagnosing and treating the infection. It seems that many of the biological characteristics of HCV are due to the existence of genotypes:

> the difficulty of creating a vaccine
> the persistence of the infection
> the resistance to the antiviral therapy, etc.

At the moment, the specialty literature knows six main viral genotypes (genotypes 1-6). Most of the classifications consider that there are 11 genotypes of HCV, some of these having their own subtypes [23-24].

There is a variation of the genotypes and the relative predominance of the different genotypes differs according to the geographical region (Figure 1) [25, 26].

PURPOSE

The purpose is seen in the comparative study of the genotypes and in the biochemical and epidemiological particularities for the patients with acute HCV at a young age (19-44 years) and middle age (45-60 years).

OBJECTIVES

1. Studying the genotype of the hepatitis C virus at the patients with acute HCV at a young and middle.
2. Studying the biochemical and epidemiological particularities of acute HCV at patients with a young and middle age.

MATERIAL AND METHOD

According to the purpose and the objectives of the paper, 113 ill persons have been examined from Mehedinti County, hospitalized at the County Hospital from Drobeta Turnu Severin during 2006-2008 with the diagnosis of acute HCV confirmed. The patients studied have been divided into 2 groups according to their age: 72 young people and 41 middle aged; we have tried to group the patients according to the seriousness of the disease, so:

- young patients
  - 4(5.6%) - easy form
  - 64(88.8%) - moderate form
  - 4(5.6%) - severe form
- middle age patients
  - 0(0%) - easy form
  - 33(80.5%) - moderate form
  - 8(19.5%) - sever form

From the epidemiologic point of view, the patients examined have been divided as follows: group 1 from the urban area where there were 44 (61.1%) patients and the rural area where there were 28 (38.9%) patients, and group 2 from the urban area where there were 20 (48.8%) ill persons and the rural area with 21 (51.2%) persons (Figure 3).

In the epidemiological anamnesis it has been established that the infection obtained through parenteral interventions (dental, surgical) was noticed at 36 (50%) sick people from the first group and at 30 (73.2%) people from the second group; through sexual contact it has been transmitted to only 7 (9.7%) sick people which were part of group 1; through blood derivates transfusion the infection took place at 1 (2.4%) sick person which was part

of group 2; blood donor was only 1 (1.4%) person from the first group; the infection through drugs took place at 6 (8.3%) patients that were part of group 1 and by tattooing to one patient that belonged to group 1. As far as the common path is concerned a number of 10 (13.9%) patients from group 1 and 3 (7.3%) patients from group 2 contacted the infection. There were 11 (15.3%) from group 1 and 7 (17.1%) from group 2 for which the methods of infection was not identified (Figure 4).

The biochemical investigation methods have been performed in the biochemical laboratory of the County Hospital from Drobeta Turnu Severin and regard the assessment of the hepatic alteration degree through common researches; emphasizing the bilirubin, the transaminases, the protrombine index (Table 1); complete blood count presents a practical interest in obtaining the answer (Table 2).

The results obtained have been subjected to a statistic calculation used with the help of EXCELL and SPSS. The statistic dependence has been presented in the concordance tables. For the hypothesis truthfulness of the lines and columns independence the non-parametric test has been used, the processed information being presented in the graphical tables and diagrams.

RESULTS

1. In Figure 2 we can see that the moderate form of disease can be found almost identically at the young age as well at the middle age (88.8% vs 80.5%); the easy form of disease can be found at a young age (5.6%) and the severe form of disease can be found at the patients of middle age (19.5%).
2. From the biochemical analysis point of view, modifications of the hepatic tests can be encountered at the patients from group 2 (the bilirubin indices being two times higher than in group 1), according to Table 1.
3. In the complete blood count no major modifications have been seen, being the same in both groups, no truthful statistic differences were seen either according to Table 2.
4. As far as the HCV genotype identification is concerned through the PCR method in the acute HCV, in Table 3, we can see that from 22 patients with acute HCV investigated for the HCV genotype through PCR, 21 (95.4%) of them had 1b genotype and 1(4.5%) had 2a genotype. The results found for ARN-VHC through PCR confirm the acute HVC.

Table 1. Biochemical tests

BIOCHEMICAL INDICES	GROUP I	GROUP II	P
TOTAL BILIRUBIN	97.2+/- 8.6	173.7+/- 21.5	<0.001
ALAT	10.4+/- 0.3	12.1+/-0.5	<0.01
PROTROMBINE	85.3+/- 1.0	80.8+/-1.2	<0.01

Table 2. Hemogram tests

HEMOGRAM PARAMETRES	GROUP I	GROUP II	P
HEMOGLOBINE g/l	142.9+/-1.8	143.2+/-1.8	>0.05
ERYTHROCYTES *10 12 /l	4.3+/-0.1	4.5+/-0.1	>0.05
LEUCOCYTE *10 9/l	5.0+/-0.1	5.2+/-0.12	>0.05
LYMPHOCYTES %	34.7+/-1.2	37.3+/-1.6	>0.05
MONOCYTES %	9.8+/-0.5	9.9+/-0.6	>0.05
VSH mm/h	12.1+/-1.3	12.8+/-1.4	>0.05

Table 3. Identification genotype

HCV GENOTYPES	RESULTS OBTAINED	
	NO	%
1b	20	95.5
2a	1	4.5
TOTAL	22	100.0
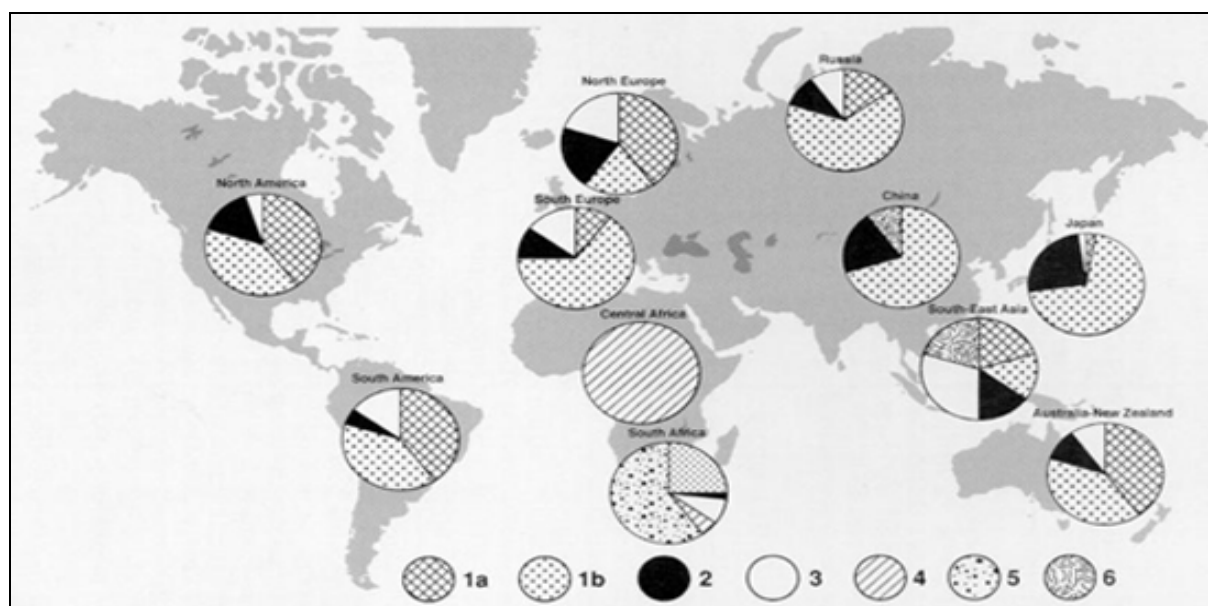
Figure 1. Variation of the genotypes
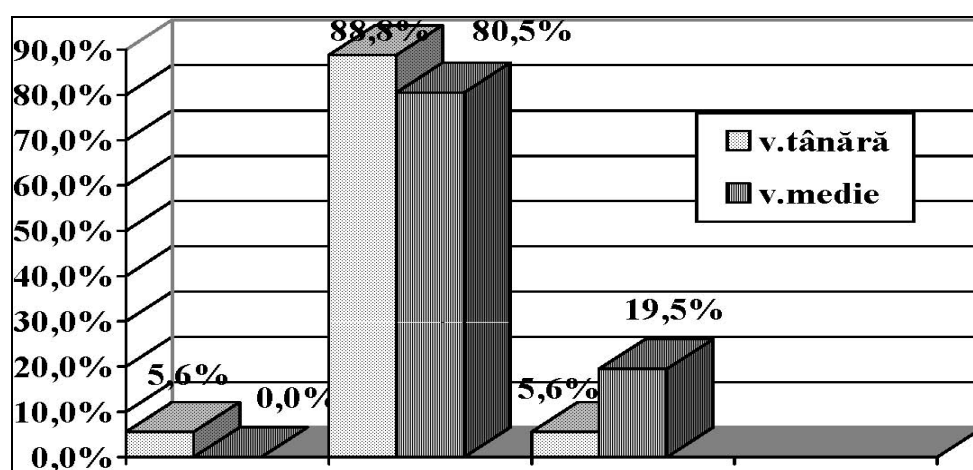
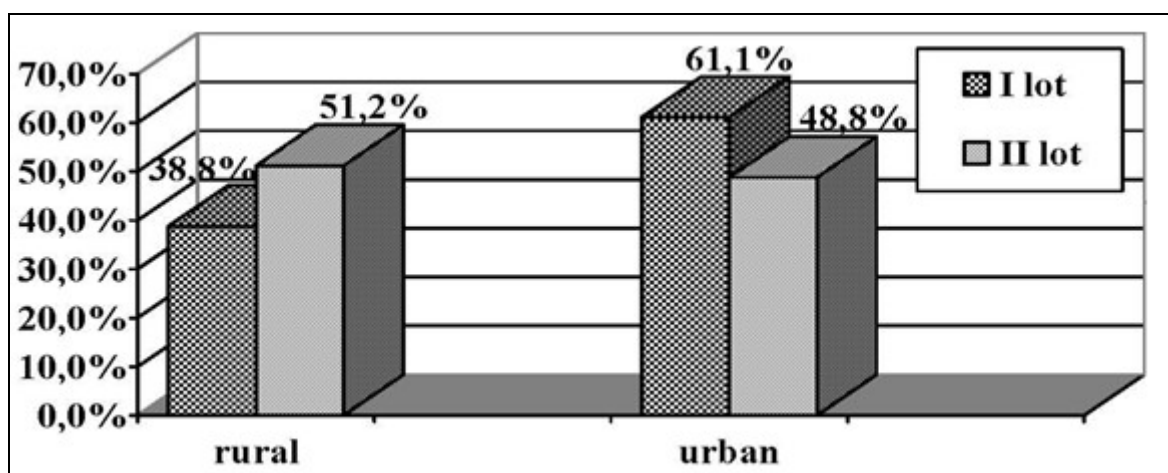**Figure 2. Acute HCV disease forms spreading according to age**

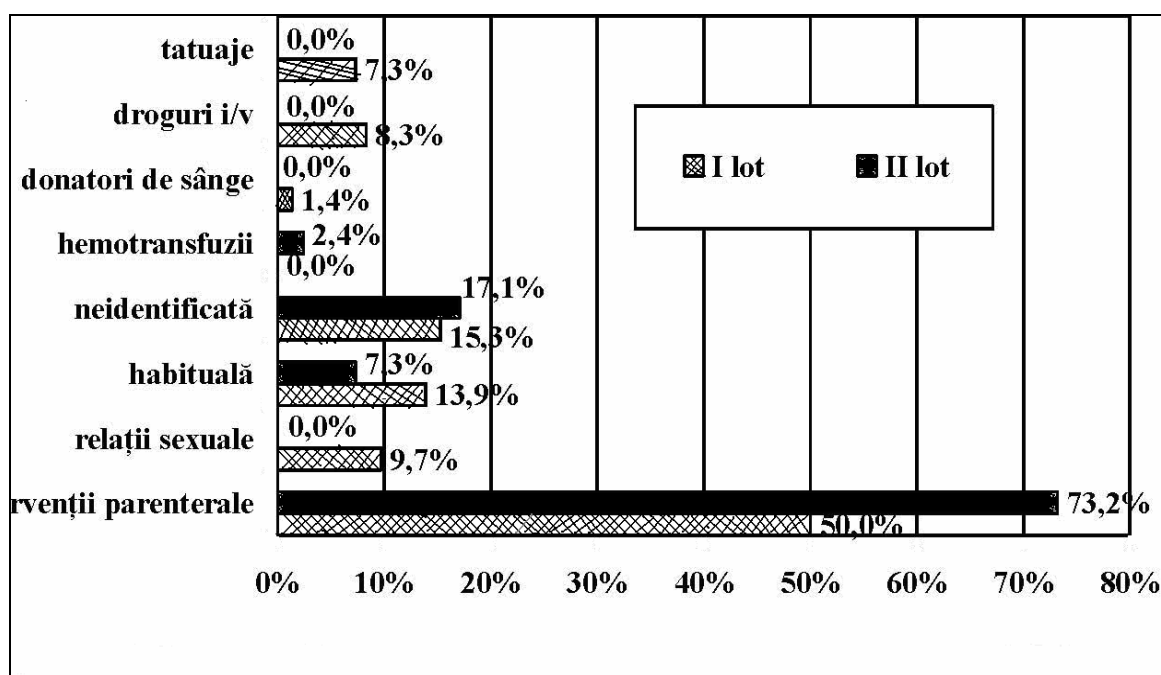**Figure 3. Division of patients according to rural and urban environment**

Figure 4. Division of patients according to the epidemiological anamnesis

DISCUTIONS AND CONCLUSIONS

1. The acute viral hepatitis affects the young aged people as well as the middle age people being encountered more frequently at the middle ages persons (1.6 times more). At the young age people, the easy and moderate forms are seen more often (94.4%) and at the middle age persons the moderate and severe types are more often seen (100%).

2. The hepatitis C virus found at the patients proved to be more frequent of 1b genotype (95.5%) for the patients studied.

3. The infection with C virus took place mostly by parenteral path (73.2%) at the middle age persons, than at the young age people 50.0%, which means it is 1.4 more frequent at the middle age persons; sexual paths transmission (9.7%) and drugs use (8.3%) being more often seen at the patients with a young age.

4. The biochemical tests showed an increase of the total bilirubin and of the ALAT, at the patients from both groups, being more decreased at the young patients.

As a practical recommendation we would like to add that in order to avoid acute HCV to become chronically it is indicated that sick persons are hospitalized for a long period of time up to 1, 3, 6 or 12 months. After discharge, the clinical, biochemical, serological investigation of the anti HCV spectrum of the biomolecular ARN-VHC test through the PCR method is recommended, thus helping to find out if the disease is chronic.

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GENERAL CONSIDERATIONS REGARDING THE ETIOLOGY OF GENITAL INFECTIONS IN WOMEN

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REZUMAT

Infecţiile genitale feminine reprezintă una dintre cele mai frecvente cauze de consult ginecologic. De aceea, ne-am propus să realizăm o prezentare a infecţiilor genitale în funcţie de localizare, evoluţie, manifestări clinice şi etiologie. Este redată şi condiţia microbiologică normală şi patologică a tractului genital feminin. Sunt prezentate microorganismele care constituie "flora normală" a tractului genital la femei, precum şi microorganismele implicate în etiologia infecţiilor genitale.

Cuvinte cheie: *infecţii genitale, vaginite, cervicite*

ABSTRACT

Feminine genital infections are representing a frequent reason of presentation to gynecological consultation. This is the reason why we have aimed to present the feminine genital infection regarding to the localization, evolution, clinical manifestation and pathology. We have focused on the microorganisms constituting the normal flora and the microorganisms involved in the etiology of genital infections.

Key words: *genital infections, vaginitis, cervicites*

Feminine genital infections are representing a frequent reason of presentation to gynecological consultation. The vaginitis and cervicites are on the top of infectious pathology due to their frequency in population, the variety of etiological agents, the variety of disease evolution and the difficulty of treatment [1-3].

A characteristic for the majority of genital infections in women is their evolution mostly asymptomatic. Unlike the urethritis in male, which have most of the times clinical symptoms, genital infections of women can evolve asymptomatic, or with a discrete clinical symptoms that usually goes undetected.

The cervical-vaginal pathology is causing discomfort through the local alterations, local or systemic complications due to chronicisation and through the formation of

dysplasia of the cervix that are, most of the times leading to malignant tumors of the cervix [4-7]. That is the reason why the correct diagnostic and the efficient treatment during the first phases of the disease are a must [4,8,9].

The principal diagnostic tool is the citobacteriological examination of the cervical-vaginal secretion. This technique allows the recognition of the etiological agent of the genital infection and inflammatory, dysplasia or tumoral lesions.

Depending on the localization, the genital infections can be: urethritis, cervicites, vulvo-vaginitis, bartholinitis, endometritis, salpingitis, ovaritis (pelvic inflammatory disease). Depending on the clinical manifestations, the infections can be asymptomatic, with reduced symptomatology, or with full symptomatology, after the evolution, the infections can evolve acute, subacute, or chronic (with the possible appearance of other complications and sequels)[10-13].

The clinical manifestation of the infection can appear as:
- Abundant muco-purulent, secretions - for most acute genital infections;
- Ulcerations, which can painful or unpainful, accompanied by regional adenopathy – in syphilis (hard chancre), Ducreyi soft chancre, venerian lymphogranulomatosis, genital herpes;
- Papiloma – caused by papilomavirus.

Untreated or mistreated genital infections are usually progressing to chronic infections:
- pelvic inflammatory disease (ascendant infection of uterus and fallopian tubes) produced by gonococcus and chlamidia,
- ano-genital cancer (caused by some types of human papilomavirus),
- secondary or tertiary syphilis,
- recurrent herpetic infections.

Other sequels produced by these chronic infections are:

- fallopian tubes lesions followed by stenosis, infertility and ectopic pregnancies; the infertility can affect also the male gender;
- congenital lesions which can appear either after the pathogenic agent had crossed the placenta either during labor by fetal contamination (e.g.: syphilis, herpes, papilomatosis, chlamidiosis)
- high risk of HIV contamination due to genital ulcerations or other affectation of the genital mucosa (gonorrhea or chlamydiosis)
- gestational pathology: premature birth, still birth, congenital malformation, reduced fetal weight at birth, premature membrane rupture.

After their etiology, the genital tract infections can be differentiated as:
- genital transmitted diseases caused by bacteria, viruses, protozoa, arthropods
- endogen "unspecific" infections (gram negative bacilli, anaerobic bacteria) or exogenous (Streptococcus pyogenes etc.) favored by local conditions (post-partum uterus, post-miscarriage, phimosis, urethral strictures, lack of local hygiene, sexual trauma, etc.) or systemic (diabetes, other endocrine alterations, immunodeficiency).

Due to the fact that most genital infections are sexually transmitted, and some can have an inaparent clinical manifestations the sexual partners have to be also investigated and treated even if they do not have the clinical symptoms [14,15].

The feminine genital tract - normal and pathologic description

1. The microbiological flora of the feminine genital tract

The normal flora of the genital tract is constituted by a divers mixture of microorganisms, with interpersonal variations and intrapersonal variation due to the normal menstrual cycle (Table 1). The normal biocenosis suffers variation with age, nutritional factors, hormonal status,

sexual activity and the general health. The quantitative determination techniques of the flora of healthy women reveal 108-109 CFU/ml (colonies forming units), being identified approximately 100 aerobic and anaerobic species in an optimal equilibrium [14-17].

The normal flora does not allow the excessive multiplication of some microbial strains and the vaginal colonization with pathogenic species.

There are two distinct areas regarding the microbial colonization:
- the vulva, vagina and exo-cervix – colonized by flora after birth;
- the uterus, fallopian tubes and ovaries – sterile, due to the lisosim, lactoferines and immunoglobulin containing cervical mucus which are limiting the access to uterine cavity and the macrophages from the uterine mucosa.

The flora of vulva rich and diverse is represented by selected species from the perineal and rectal microbiota (enterobacteria, difteromorfi, staphylococci coagulase-negative, streptococci, saprophyte neisseria, lactobacilli, Candida, etc.).

The vaginal specific flora is influenced by hormonal factors. In adult woman, from puberty to menopause Lactobacillus (Döderlein bacilli) is predominant. They are fermenting the glycogen from the vaginal epithelia under the control of estrogens and are causing an acid pH unfavorable to the multiplication of Gram-negative bacilli and fungi. During the menstrual cycle the quantity of lactobacilli is variable, being more abundant during the follicular period

and towards the end of menstrual cycle, when a small amount of cytolysis is present. Sometimes this flora can cause important cytolysis, losing the saprophyte character and becoming inflammatory. This cytolysis is caused by an estrogenic deficiency or a misbalance between the estrogens and progesterone.

Besides these germs, from the vagina of healthy women other germs can be isolated, such as: coagulase-negative staphylococci, group B streptococci, enterococci, streptococci viridians, saprophyte Neisseria, difterimorfi, enterobacteria, Candida, Gardnerella vaginalis (in 10–40% of healthy women)[14,15].

Sometimes, under the influences of maternal esrtogens which are crossing placenta, mature flora can be encountered at new born in the first 2-3 weeks after birth.

Before menarche and after menopause (after the reduction in estrogen levels the vaginal epithelia is losing the glycogen and becomes atrophic, the pH is rising, and the lactobacilli are becoming rare) the vagina is being colonized by selected species from the perineal and rectal microbiota, and the flora resembling to that of the vulva.

The normal flora is deterring, with some limitations the excessive multiplication or colonization of vagina with pathogenic species.

The normal physiological vaginal secretions is formed by the serous endocervix secretions, epithelial desquamated cells and the normal flora and is usually asymptomatic.

Table 1. The normal vaginal flora, the frequency and the potential pathogenicity in genital infections

Microorganisms	Frequency	Possible pathogen
A E R O B I C B A C T E R I A		
Streptococcus pyogenes	+	+ +
Streptococcus agalactiae	+	+ +
Streptococcus viridans	+ + +	±
Enterococcus faecalis	+	+ +
Staphylococcus aureus	+	+ + +
Staphylococcus epidermidis	+ + +	+
neisserii saprofite	±	-
lactobacili Döderlein	+ + + +	-
difterimorfi	+ + +	-
Gardnerella vaginalis	+ +	+
E. coli	+	+ +
Proteus spp.	+	+
Klebsiella spp.	+	+
Pseudomonas spp.	±	±
Acinetobacter spp.	+	+
Mycoplasma spp.	+ +	+
Ureaplasma urealiticum	±	±
A N A E R O B I C B A C T E R I A		
Peptococcus	+ +	+ +
Peptostreptococcus	+ +	+ +
Clostridium spp.	+	+ +
Bifidobacterium	±	±
Fusobacterium	+ +	+ +
Veillonella spp.	+	+
Bacteroides spp.	+ + +	+ + +
Prevotella spp.	+ +	+ +
O T H E R M I C R O O R G A N I S M S		
Candida spp.	+ +	+ +
Torulopsis spp.	+	±
actinomicete	+	±
Trichomonas vaginalis	±	+ +

2. The microorganisms involved in the etiology of genital infections in women

By etiologic means, genital infections can evolve as (Table 2):
- Endogenous infections, caused by microorgamisms from the normal vaginal flora;
- Exogenous infections, caused mostly by sexually transmitted microorganisms. Another possibility is represented by the therapeutic maneuvers that are causing nosocomial infections, highly virulent and difficult to treat.

The microorganisms involved in the ethiology of genital infections can be microbes, viruses, fungi or parasites:
- Bacteria:
1. Neisseria gonorrhoeae - gonorrhea;
2. Treponema pallidum – syphilis;
3. Chlamydia trachomatis

- serotypes D - K – nonspecific genital infections;
- serotypes L1, L2, L3 - venerian lymphogranulomatosis;
6. Gardnerella vaginalis - nonspecific vaginitis, frequent associated with anaerobic bacteria;
7. Haemophilus ducreyi – soft chancre;
8. Enterococci, enterobacteria and species of Campylobacter - nonspecific genital infections;
9. Group B Streptococci - Streptococcus agalactiae – septicemia and neonatal meningitis;
10. Anaerobic germs - mixed infection, post-partum infections, post-abortum;
11. Calymmatobacterium granulo-matis - granuloma inghinale (Donovanosis)
The Haemophilus ducreyi, Calymmato-bacterium granulumatis şi Chlamydia trachomatis – serotypes L1-L3 infections are do not exist in the geographical areal of Romania.
- Viruses:
1. Herpex simplex virus - type 2, but also type 1 - genital herpes;
2. Human papillomavirus - genital papilo-matosis;
3. HIV – AIDS;
4. Hepatitis B and C virus (very rare Hepatitis A virus);
5. Cytomegalovirus;
6. Molluscum contagiosum virus;

Interestingly, some viruses present in vaginal secretions can be transmitted through intercourse without having clinical manifestations of genitalia (hepatitis B and C virus, cytomegalic virus, HIV).
- Fungi:
1. Candida albicans – genital candidosis;
2. Cryproccocus neoformans;
- Protozoa:
1. Trichomonas vaginalis - vulvo-vaginitis;
- Arthropods:
1. Phthirius pubis – pubian pediculosis;
2. Sarcoptes scabiei - scabies.

The mixed etiology is constantly observed. The possibility of existence of several

4. Mycoplasma hominis - nonspecific genital infections;
5. Ureaplasma urealiticum - nonspecific genital infections;
sexual transmitted agents imposes a strict diagnostic protocol.

The microorganisms involved in the pathogenesis can be:
- Highly pathogens, sexual transmitted (ex.: N. gonorrhoeae, T. pallidum, C. trachomatis);
- Conditional pathogens, constituents of vaginal microflora, which in certain circumstances can multiply and became a majority (ex. C. albicans, G. vaginalis).

The great diversity of the genital infections etiology, the high frequency of asymptomatic forms and the number of complications are requesting a detailed medical examination for a complete and correct etiologic diagnostic and treatment [6,16-18].

The smear of vaginal content has various elements: vaginal epithelial cells, exo- and endocervix cells, endometrial cells, and formed elements of the blood (PMNs, lymphocytes, monocytes, and erythrocytes) and conjunctives cells (histiocytes, mastocytes) which are crossing the vaginal mucosa or appear during the menstrual or pathological bleeding. In pregnancy, postpartum and post-abortum trophoblastic and placentar cells can be observed. After intercourse, sperm cells can be found. Also, associated with the rest of prior described elements a normal or pathogen flora, parasites, fungi, inflammatory, degenerative or tumoral cells can be observed.

The various composition of vaginal content is reflecting the normal or the pathogen status of genitalia[5,19,22,23]. The data showed by the vaginal smears, with proper coloration technique and correctly interpreted can diagnose dysplastic or malignant lesions and the ovarian hormonal function.

In the current medical practice, for the study of cervico-vaginal cells and the other elements present in the vagina, two smears are performed: one from the posterior superior vaginal segment and one from the cervix from the junction between the exo and endocervix. Sometimes for the diagnostic of gonococcus and Chlamydia infection a smear from the endocervix is performed, because these microorganisms are multiplying at this level [13,16,17].

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CORRELATIONS BETWEEN PUBERTARY MATURATION AND THE BEGINNING OF SEXUAL LIFE AT HIGH-SCHOOL PUPILS

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REZUMAT

Obiective: Studiul a urmărit cunoaşterea gradului de maturizare pubertară şi a legăturii acestuia cu începerea de către tinerii de azi a relaţiilor sexuale. Material şi metodă: Lotul de studiu a fost constituit din 722 de elevi orădeni din clase de liceu, cu vârste cuprinse între 14 şi 18 ani, în anul 2008. Metodologia de lucru a fost cea elaborată de Institutul de Sănătate Publică "Prof.Dr. Leonida Georgescu din Timişoara", cu prilejul efectuării unui program naţional de monitorizare a stării de sănătate a copiilor şi adolescenţilor din România, în perioada 1998- 1999. Rezultate : Un procent important de tineri s-au prezentat în stadiu V de maturizare puberală(74,4%), 99,1% dintre fete şi 35,9% dintre băieţi. 90,5% din fete au fost încadrate încă de la 14 ani în stadiul V puberal, 15,4% dintre băieţii de această vârstă au fost încadraţi în stadiul V(maturizare completă), majoritatea fiind la 14 ani în stadiul IV(69,2%). Aproximativ un sfert dintre liceene şi-au început viaţa sexuală(24%), dintre care 24,2% erau mature sexual, iar dintre băieţii de liceu, 48,2% au avut relaţii sexuale, 63,7% fiind complet maturi sexual. Concluzii: Un bun management al comportamentelor cu risc impune cunoaşterea în primul rând a dimensiunii fenomenului şi a trăsăturilor particulare bio-psiho-sociale ale tinerilor, cunoaşterea unor dificultăţi majore cu care se confruntă societatea umană şi lumea medicală, ce necesită un înalt standard de prevenţie.

ABSTRACT

Objectives: This study aims to evaluate the level of pubertary maturation and its connection to the beginning of their sexual life in the case of contemporary adolescents. Material and method: The sample group chosen for this study is made up of 722 high-school pupils from Oradea, aged between 14 and 18 years old in 2008. The methodology has been developed by the Institute of Public Health "Prof. Leonida Georgescu", Timisoara, while initiating a national program for monitoring the health state of Romanian children and

*adolescents, which was carried out between 1998-1999. **Results:** An important percentage of young people could be included in stage V of puberal maturation (74.4%), of which 99.1% were girls and 35.9% were boys. 90.5% of the girls were included in the puberal stage V starting with the age of 14, 15.4% of the boys of the same age have been included in the stage of complete sexual maturation (stage V), most 14 years old boys being included in stage IV (69.2%). About a quarter of the high-school girls have started their sexual life (24%), of which 24.2% were sexually mature; among high-school boys, 48.2% have had sexual relations, 63.7% of them being completely sexually mature. **Conclusions:** A good management of risk behaviour primarily requires the understanding of the sexual maturation phenomenon and of the bio-psycho-social characteristics of young people, the comprehension of the major difficulties the human society and the medical world are confronted with, which draw attention upon the need for high prevention standards.*

INTRODUCTION

Contemporary adolescents begin heir sexual life earlier than the previous generations of young people. Several studies have indicated the increased likelihood for young persons to have sexual relations in the first years of adolescence, given the early installation of puberty in the case of contemporary adolescents.

The mechanism of sexual maturation is very complex, the onset of puberty being associated with important changes in the neurovegetative, the genital, and the endocrine (especially the hypophyseal) systems. The degree of sexual maturation represents an indicator of the health state and is influenced by individual and ecologic factors. Sexual behaviour is related to the features of secular-trend pubertary maturation.

Since condoms are used by less than half of the sexually active adolescents, the teenagers who begin their sexual life earlier have the tendency to change more sexual partners and are consequently exposed to sexually transmitted diseases or unwanted pregnancies [1]. The early beginning of sexual life is associated with intake of toxic substances, inadequate use of contraceptives, juvenile criminality, and violent or problematic behaviour [2].

For both sexes, the beginning of sexual activity is determined by: the intensity of sexual impulses, ethic and aesthetic motivations, social and economic conditions, as well as the influence of the external environment. Since the capacity to procreate is present before the psychic maturation is complete, and the relationships between young people involve a series of responsibilities, the early beginning of sexual life is not recommended [3].

The approach of this subject represents a very good opportunity to initiate educative activities, aimed at influencing and shaping the personality of young people, so that their behaviour and attitude towards their own sexuality will be in accordance with the norms of social life [4].

MATERIAL AND METHOD

The sample group used for this study is made up of 722 high-school pupils from Oradea, aged between 14 and 18 years old in 2008. The evaluation of sexual maturation has been established with the help of a method developed by the Institute of Public Health "Prof. Leonida Georgescu", Timisoara, and the medical examination of subjects (general clinical examination), with the view of including adolescents in one of the stages of sexual maturation determined by J.M. Tanner. Evaluators have registered the date of the first menstruation at girls and of the first ejaculation at boys, and have observed secondary sexual characteristics of subjects [5]. The sexual behaviour of adolescents has been investigated using the method of the

retrospective descriptive epidemiological enquiry, based on individual questionnaires. The questionnaire we have used has been developed starting from other nationally or internationally acknowledged question-nnaires, used for the investigation of risk behaviour: the CAST 2002-PHA Timis, UMF Timisoara, the American YRBSS – Youth Risk Behaviour Surveillance System 2005 questionnaire, the CORT 2004 – PHA Timis, UMF Timisoara, ISP Timisoara [6-

10]. The data obtained have been processed using the statistical-mathematical method.

RESULTS

The group of young people referred to in this study was made up of 438 girls (60.7%) and 248 boys (39.3%), the girls/boys ratio being of 1.5:1 (Figure 1).
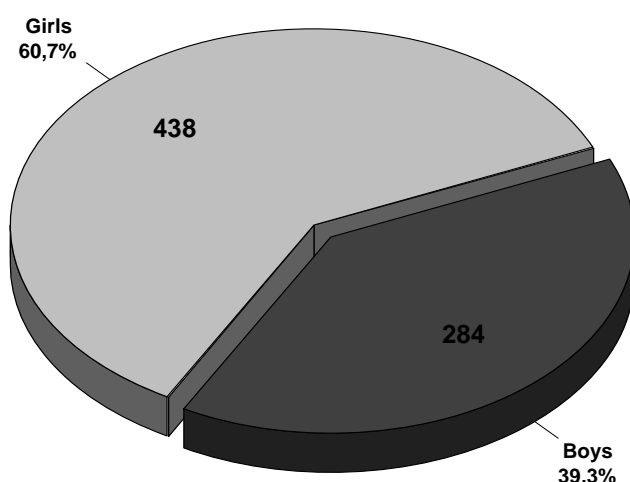
Figure 1. Distribution of subjects in terms of sex

The distribution in terms of age has been almost similar (adolescents between 15-18 years old). There are a few subjects under

14 (7.6%). There are no significant differences between girls and boys with regards to their distribution in terms of age (p>0.05) (Figure 2).
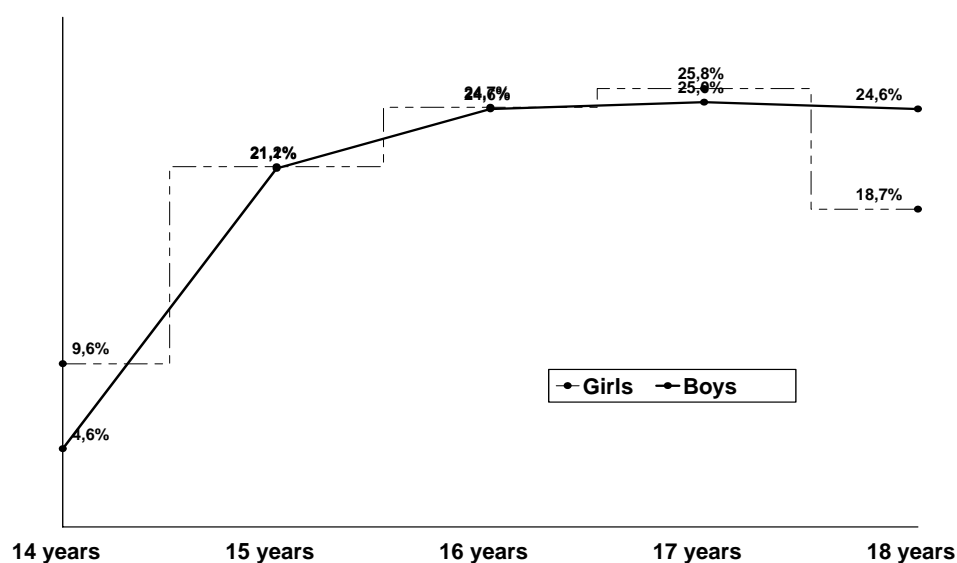
Figure 2. Distribution of subjects in terms of sex and age

The great majority of adolescents can be included in stage V of puberal maturation (74.4%) (Figure 3).
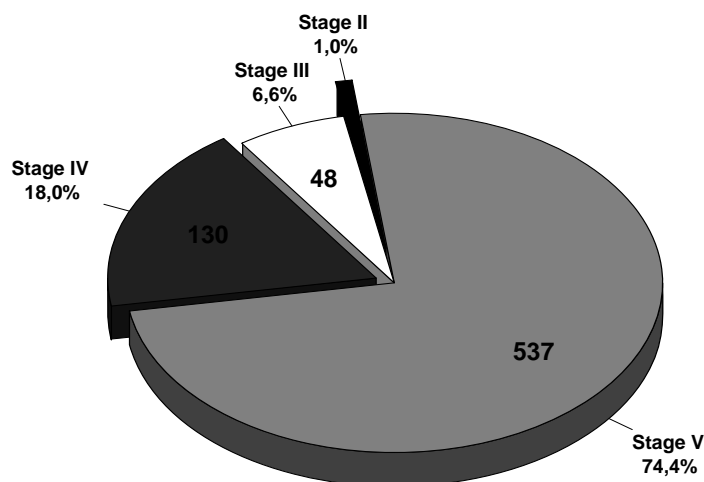
Figure 3. Distribution of subjects in terms of sexual maturity stage

Almost all girls (99.1%) could be included in stage V, while in the case of boys the percentage that could be included in stage V is of only 35.9%, over 45% being included in stage IV (p<0.001) (Figure 4).
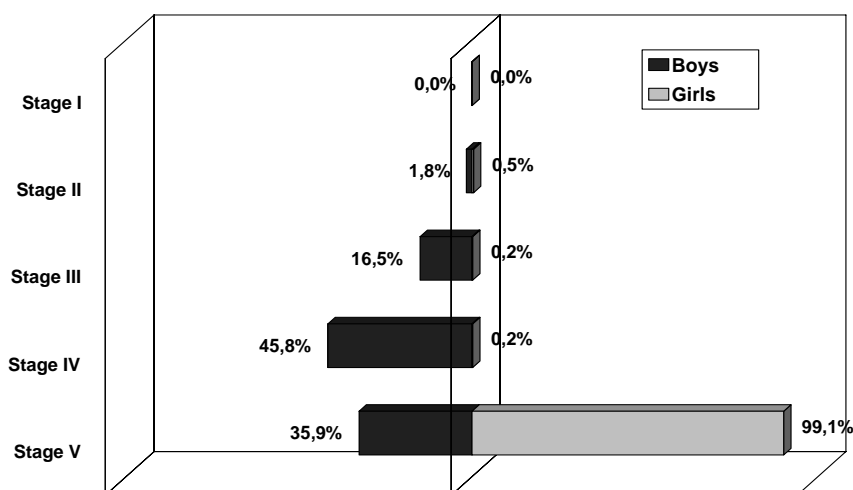
Figure 4. Distribution of subjects in terms of sex and stage of sexual maturity

From the evaluated group, only 4 girls did not have menstruation (0.9%). For the majority of girls, the first menstruation appeared at the age of 12 or 13 (65.2%), the average age being of 12.4±1.1 years (Figure 5).
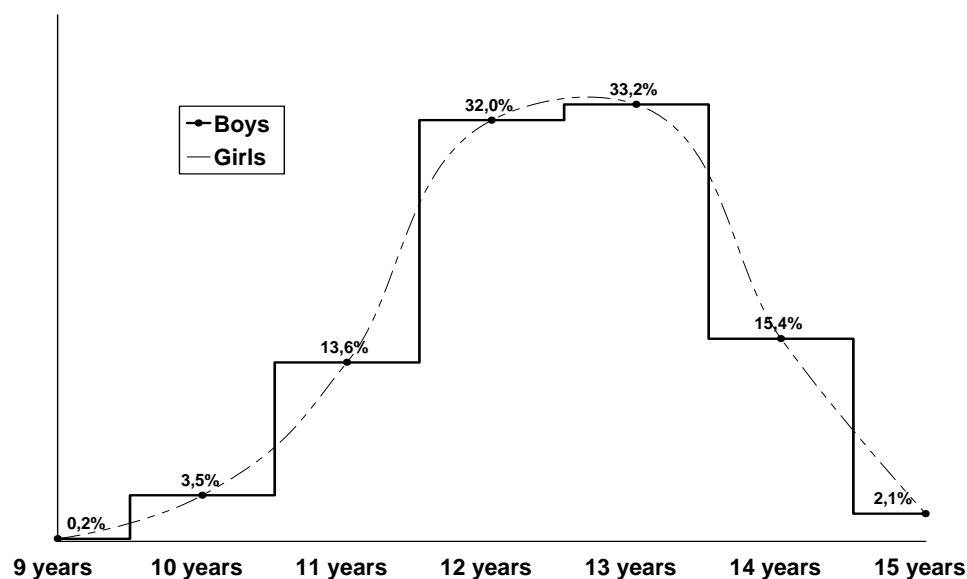
Figure 5. Distribution of girls in terms of age at their first period

Boys declared they had their first ejaculation between the age of 12-13 (58.1%); the ones who had their first ejaculation after the age of 13 form a percentage of 16.2%: it appears that they are 1,6 times fewer than the boys having had their first ejaculation before the age of 12 (25.8%) (Figure 6).
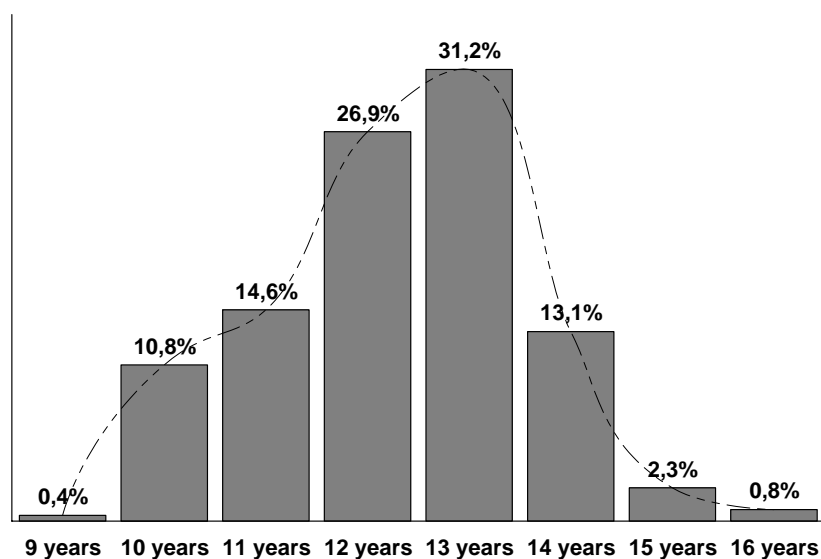
Figure 6. Distribution of masculine subjects in terms of age at their first ejaculation

One can see that, at the age of 14, most girls can be included in stage V of sexual maturation (90.5%), while in the case of boys the age of 18 is considered the most frequent one for sexual maturation (75.7%); until the age of 16, most boys can be included in stage IV and only after the age of 16 their great majority can be included in stage V (p<0.001) (Figure 7).
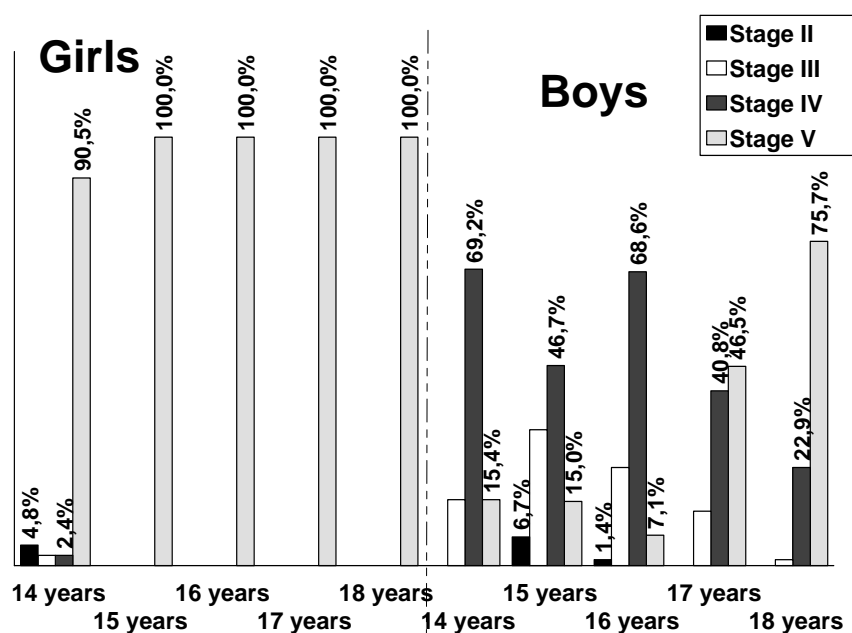
Figure 7. Distribution of subjects in terms of sex, age and stage of sexual maturity

A quarter of the high-school girls have started their sexual life (24%), all being included in stage V of sexual maturation, which represents 24.2% of the total number of girls included in stage V.

48.2% of the high school boys declared they have already started their sexual life.

Among the adolescents included in stage III of sexual maturation, only 21.3% have started their sexual life, while from among the ones included in stage IV only 47.7% can be mentioned, and from stage V 63.7% (Figure 8).
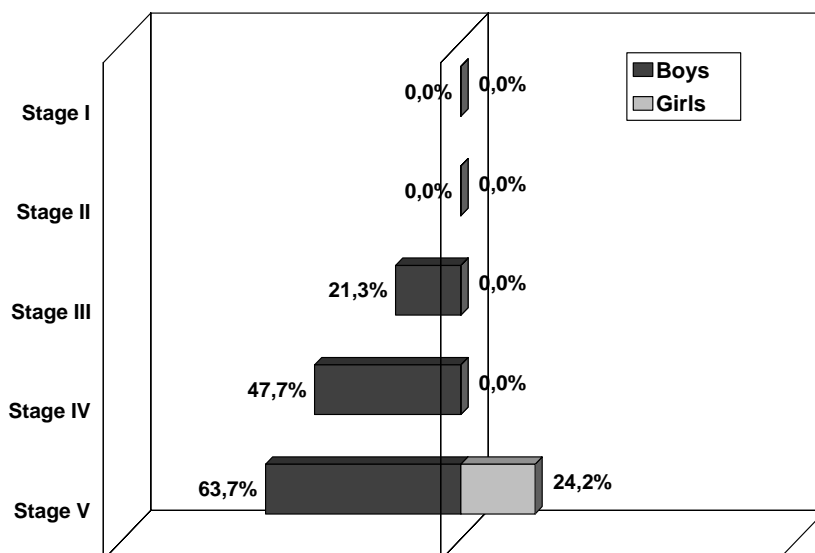
Figure 8. Distribution of subjects in terms of sex, stage of sexual maturity and sexual life

DISCUSSIONS

Starting from the theoretical underpinning, the phenomenon of "acceleration", or the more precocious recognition of sexual maturation, can be observed in all countries of the world, irrespective of geographical positions, climatic conditions, the ethnic

mixture of the population, the urban or the rural environment or the level of social status of individuals [11].

Some studies have indicated that sexually precocious young people grow quicker and present a more intense and obvious physical development [12].

One can observe similarities between the age of the first menstruation in case of girls and of the first ejaculation in case of boys (12-13 years old). The age of the first ejaculation, which appears more frequently during the night, has merely a guiding function; the appearance of secondary sexual features are more important in establishing the stage of sexual maturation in case of boys. The boys who have been included in stage V of sexual maturation present genital organs similar to adult sexual mature organs with regards to their form and size. The girls included in stage V already had their first menstruation. About a quarter of the total number of investigated girls, more exactly a quarter of the biologically mature ones (stage V), have started their sexual life. About a half of the percentage of high-school boys evaluated for this study (48.2%) already had sexual relations.

Speaking of sexual education, A. Berge has emphasized the idea that young persons need certainties and truths, rather than interdictions; they want to understand their own sexuality not only in terms of intellectual and affective factors, but also in terms of moral issues [12].

CONCLUSIONS

None of the adolescents included in this study have been included in stage I, or the pre-puberal period; 25,6% were included in the puberal stages II, III and IV and most of them (74.4%) were included in stage V. While only 0.2% of the girls are in stage IV, 45.8% of the boys can be included in this segment. Such a discrepancy confirms the assumption generally accepted by scientists,

which refers to the precocious biological maturation of girls.

The percentage of sexually mature girls (stage V) is 2.76 times bigger than that of adolescent boys. 3.7% of the girls declared that they had their first menstruation between the age of 9 and 10 years. The adolescent girls who have their first menstruation earlier present the tendency to begin their sexual life sooner than the ones who have their first menstruation later; these girls are exposed to a series of risks sooner than the others.

In case of girls, sexual life generally begins after the reaching of sexual maturity, while boys end to experience sex as early as their pre-puberal stages (stages III and IV). These results confirm the theory of the secular acceleration phenomenon, which states that contemporary generations reach biologic maturation and the capacity to procreate sooner than the past generations.

This study confirms the existence of a correlation between the degree of pubertary maturation and the beginning of sexual life in the case of adolescents; consequently public institutions involved in the education of young people, especially the family and the school, should educate them so that the possible medical and social negative consequences of their actions can be avoided.

The role of sexual education is to help young persons have a balanced, risk-free sexual life; however, this cannot be achieved by recommending abstinence, since it could generate unhealthy sexual practices. Young people who present behavioural troubles associated with puberty should be given a special attention; combined with educative inadequacies, unfavourable living conditions and negative models, these problems can lead to sexual criminality (rape, prostitution) [13].

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ASPECTS OF BODY IMAGE AND WEIGHT CONTROL PRACTICES OF ADOLESCENTS

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REZUMAT

Adolescenţa reprezintă timpul unor schimbări fizice şi emoţionale intense şi rapide. Pe măsură ce tinerii încep să se concentreze mai mult pe înfăţişarea lor fizică, preocuparea privind imaginea corporală devine factor important asociat cu sănătatea şi starea de bine din această fază de dezvoltare. Practicile de control al greutăţii sunt de interes pentru sănătatea adolescenţilor datorită prevalenţei lor mari şi a consecinţelor dăunătoare posibile. **Obiective:** *investigarea unor aspecte privind imaginea corporală, estimarea prevalenţei modalităţilor de control al greutăţii la adolescenţi şi analiza impactului parţial al imaginii corporale şi metodelor de control al greutăţii asupra riscului de supragreutate şi obezitate.* **Material şi metodă**: *studiul s-a desfăşurat în perioada 2007-2008 pe un eşantion de 1311 adolescenţi, folosind ca instrument de lucru chestionarul.* **Rezultate**: *32,1% dintre elevi s-au descris ca fiind supraponderali şi 20% ca fiind subponderali. 52,6% dintre adolescenţi au folosit în timpul celor 30 de zile anterioare desfăşurării interviului diverse practici pentru a slăbi sau pentru a nu creşte în greutate. La subiecţii care au încercat să slăbească riscul de hiperpondere şi obezitate a fost mai mare (β=1,32). Metodele folosite pentru a slăbi au fost pozitiv asociate cu riscul de hiperpondere şi obezitate.* **Concluzii:** *Mulţi adolescenţi au avut o concepţie eronată asupra greutăţii lor corporale iar eforturile de a slăbi sau a nu creşte în greutate au fost prevalente la adolescenţi, în special la fete. R-pătrat arată că variabilele pentru care am ales să controlăm sunt răspunzătoare pentru o proporţie semnificativă din variaţia riscului de hiperpondere şi obezitate.*
Cuvinte cheie: *adolescenţi, imagine corporală, controlul greutăţii, risc hiperpondere şi obezitate*

ABSTRACT

Adolescence marks a time of rapid and intense emotional and physical changes. Body image emerges as significant factor associated with health and well-being during this developmental phase, as youths begin to focus more on their physical appearance. Unhealthy weight control practices are of concern for adolescent health given their high prevalence and harmful consequences. **Objective**: *to investigate body image perception of adolescents, to estimate the prevalence of various weight control practices of adolescents and to analize the partial impact of body image perception and methods used to control weight on the risk of*

obesity and overweight. ***Material and methods****: the study was conducted during 2007-2008 on a sample of 1311 adolescents. Data was gathered using the questionnaire.* ***Results:*** *32.1% of students described themselves as overweight and 20% described themselves as underweight. During the 30 days preceding the survey, 52.6% of students had used some methods to lose weight or to keep from gaining weight, the most prefferred method being doing intense physical exercises associatted or not with dieting. When subjects were trying to loose weight the risk of obesity and overweight was higher (β=1.32). Measures employed to loose weight were positively associated with the risk of obesity and overweight.* ***Conclusions:*** *Many adolescents did have misconceptions about their body weight and efforts to lose or maintain weight were prevalent among adolescents, especially among girls. Reported R-squared show that all variables for which we have controlled are responsible for a significant variation of the investigated risk.*

*****Key words****: adolescents, body image, weight control, overweight and obesity risk*

BACKGROUND

Body image is the dynamic perception of one's body– how it looks, feels, and moves. Because adolescents experience significant physical changes in their bodies during puberty, they are likely to experience highly dynamic perceptions of their corresponding body image. Puberty for boys brings characteristics typically admired by society– height, speed, broadness, and strength. Puberty for girls brings with it characteristics often perceived as less laudable, as girls generally get rounder and have increased body fat1. Studies have found that 50-88% of adolescent girls feel negatively about their body shape or size [1-3] and they are much more likely than males to think their current size is too large. On the other hand, over one-third of males think their current size is too small [1,4]. Overconcern with body image and shape can lead to restrictive dieting and unhealthy weight control methods which in turn may trigger potentially dangerous disordered eating behaviors. Studies have found that these behaviors are prevalent among youth, particularly among adolescent girls [5-7]. Furthermore, as youth progress through adolescence and into adulthood, the use of these behaviors increases [6,7]. Extensive and/or long-term dieting to lose weight has potentially serious consequences for young people's development. Disordered eating behaviors are associated with a number of harmful behavioral, physical and

psychological consequences, including poorer dietary quality [7,8], increased irritability, problems with concentration and sleep disturbances, menstrual irregularities, risk of growth retardation, delayed sexual maturation [9], weight gain and obesity onset [6,10,11], depressive symptoms [12] and the onset of eating disorders [13].

MATERIAL AND METHOD

The study was conducted during 2007-2008 academic year on a sample of 1311 middle and high school adolescents, of ages between 10 and 19. The main research tool was the questionnaire. The questionnaire employed in the present study was based on traditional questionnaires, used for the investigation of youth risky behaviors: the YRBSS 2005, the UMF Timisoara and the ISP Timisoara questionnaires, CORT 2004 [12-14]. Traditional statistical analyse of the differences among classes of variables was conducted using EPIINFO 6.0 software. T-tests were used to determine pair-wise differences between subpopulations. Differences between prevalence estimates were considered statistically significant if the t-test p-value was <0.05. Next we have conducted a SAS econometric analysis of the partial impact of body image perception and methods used to control weight on the risk of obesity and overweight. We have

constructed a binary variable corresponding to the investigated risk. After determining the R-squared corresponding to each of the independent variables, we have employed LOGIT modelling to estimate the size and direction of the impact of body image perception and weight control practices on the risk of obesity and overweight. Formally the model is: Body weight perception, Weight control measures, Measures to loose weight). In the model above we basically have modelled the odds of obesity and overweight as a linear function of its determinants. We can find the probability of interest (in our case the risk of obesity and overweight) as p=(ez)/(1+ ez) where z is our defined linear function.

We underline the benefits of this analysis. Traditional analysis focuses on the correlations between BMI or corresponding weight status categories and statistically significant differences between classes of variables. Whereas results can be informative, they do not have a causality interpretation and therefore their interpretation is ambiguous for policy analysis. Whether or not the risk of obesity is associated with body weight control methods does not necessarily imply that such body weight control methods impact on the risk of obesity and overweight. It might be as well that the inverse is true; it is plausible after all that adolescents with weight problems try to control their body weight. On the contrary, an econometric analysis does have a causality interpretation by definition. The estimated coefficients are successful in isolating the impact of independent variables – in this case the perception of body weight and methods used to control the body weight – on the risk of obesity and overweight.

RESULTS

The study population consisting of 1311 adolescents was composed of 726 (55.4%) girls and 585 (44.6%) boys. 41.6% of adolescents were middle school students and 58.4% were high school students. Based on their BMI* , adolescents were classiffied in weight status categories. 76.7% of adolescents were healthy weight students, 13.6% were overweight, 5.6% were obese and 4% were underweight.

32.1% of students described themselves as slightly or very overweight and 20% described themselves as underweight (Figure 1).
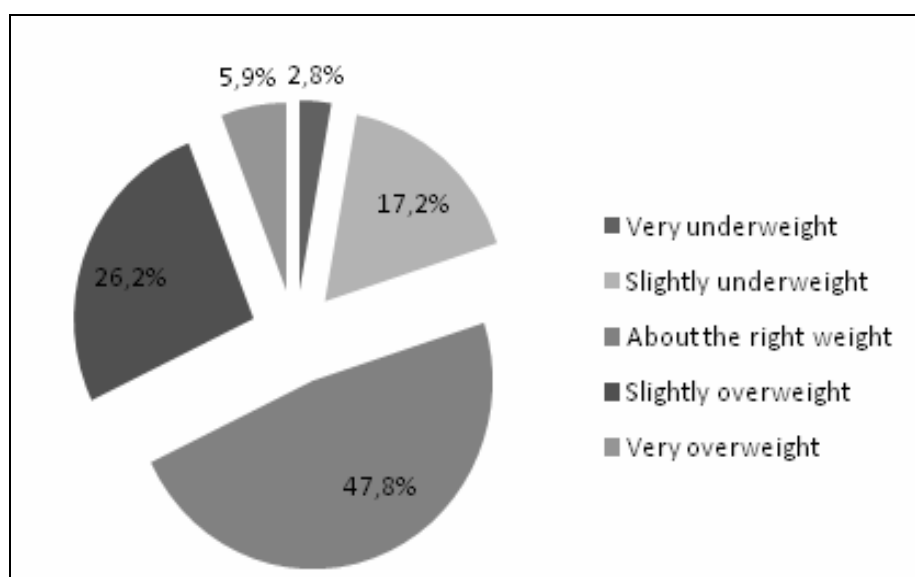

Figure 1. Body image perception of adolescents

Overall, the prevalence of describing themselves as overweight was higher among girls (35.4%) than boys (28.1%), and the prevalence of describing themselves as underweight was higher among boys (24.7% versus 16.4)%), with significant differences about body image perception depending on sex (p=0.0252) (Figure 2).
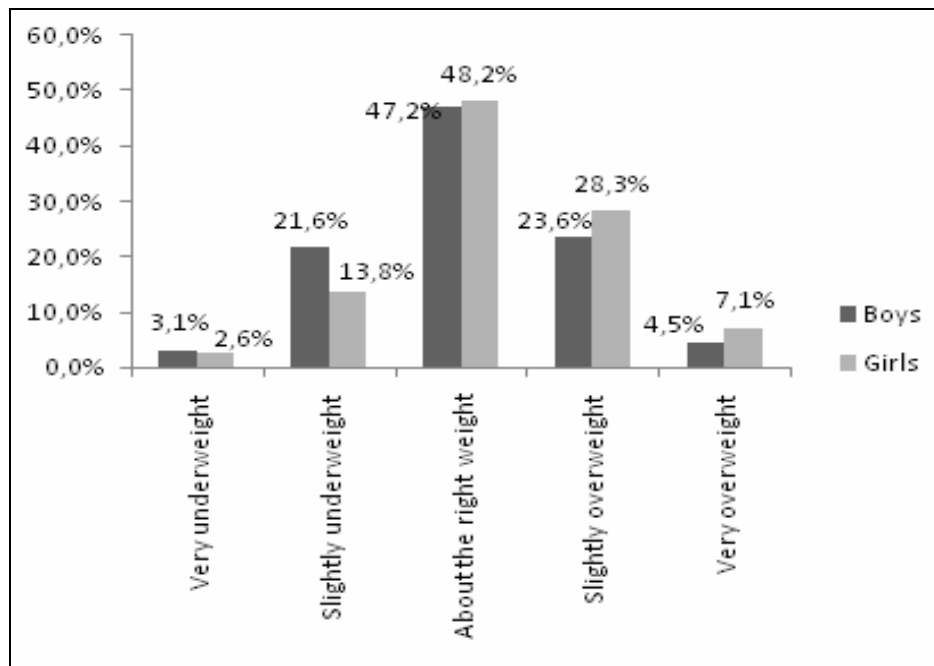

Figure 2. Body image perception of adolescents by sex

The prevalence of describing themselves as overweight was higher among high school students (34.7%) than middle school students (28.7%), without significant differences about body image perception among middle and high school students (p=0.1262) (Figure 3).
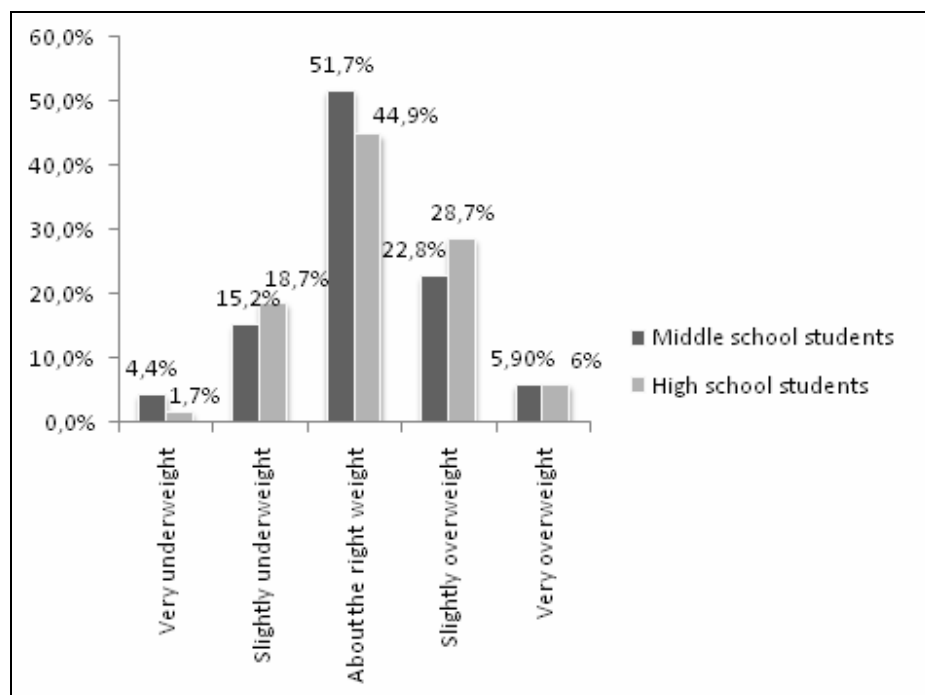
Figure 3. Body image perception of adolescents by age

0.1% of overweight and obese students, 24% of healthy weight students and 5.7% of underweight students described themselves as overweight (Figure 4). There

were significant differences about body image perception depending on weight status categories used for teens (p<0.001).
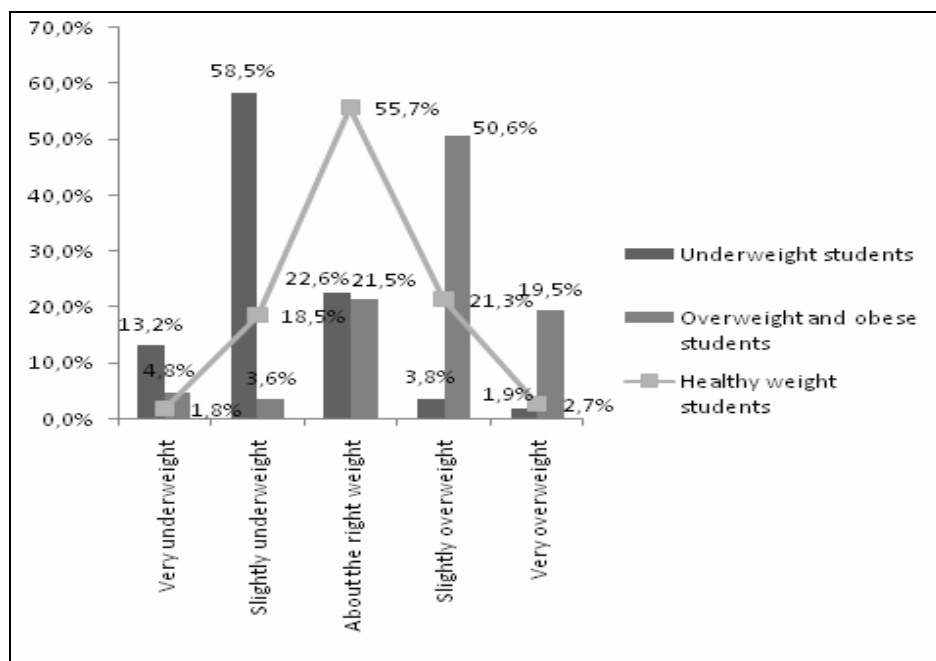
Figure 4. Body image perception of adolescents by weight status categories
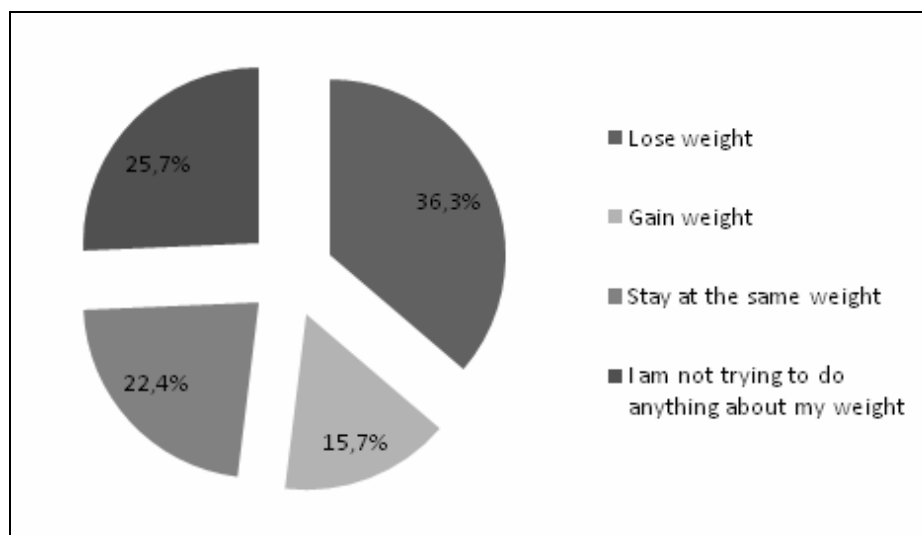
Figure 5. Percentage of adolescents who engaged in weight control practices

36.3% of students were trying to lose weight (Figure 5). The prevalence of trying to lose weight was higher among female (42.1%)

than male (47.8%) (Figure 6), and among middle school students (41.5%) than high school students (32.5%) (Figure 7).
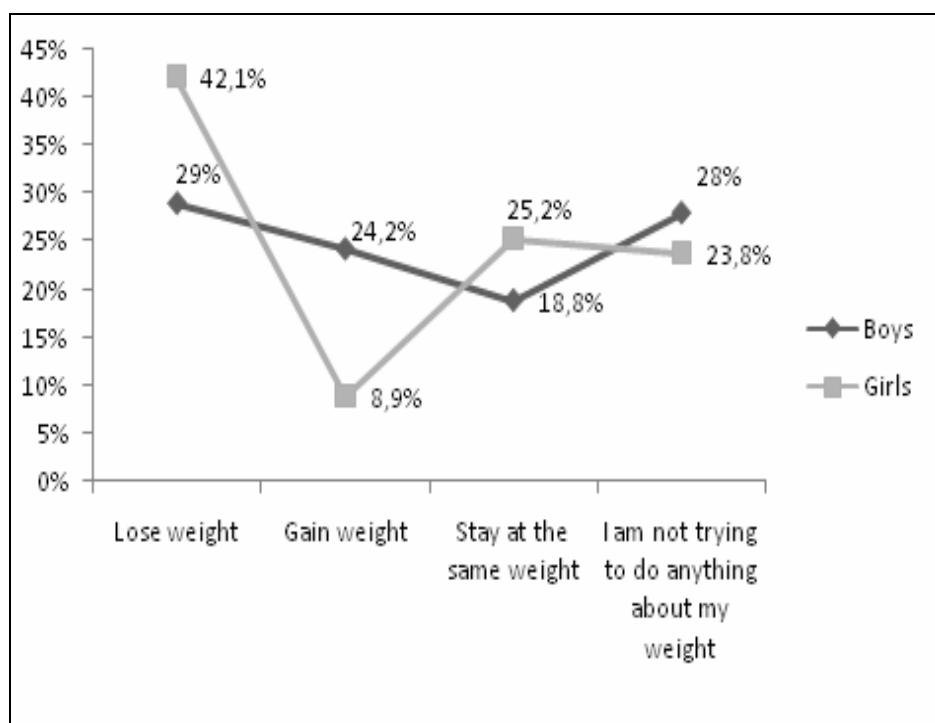
Figure 6. Percentage of adolescents who engaged in weight control practices by sex
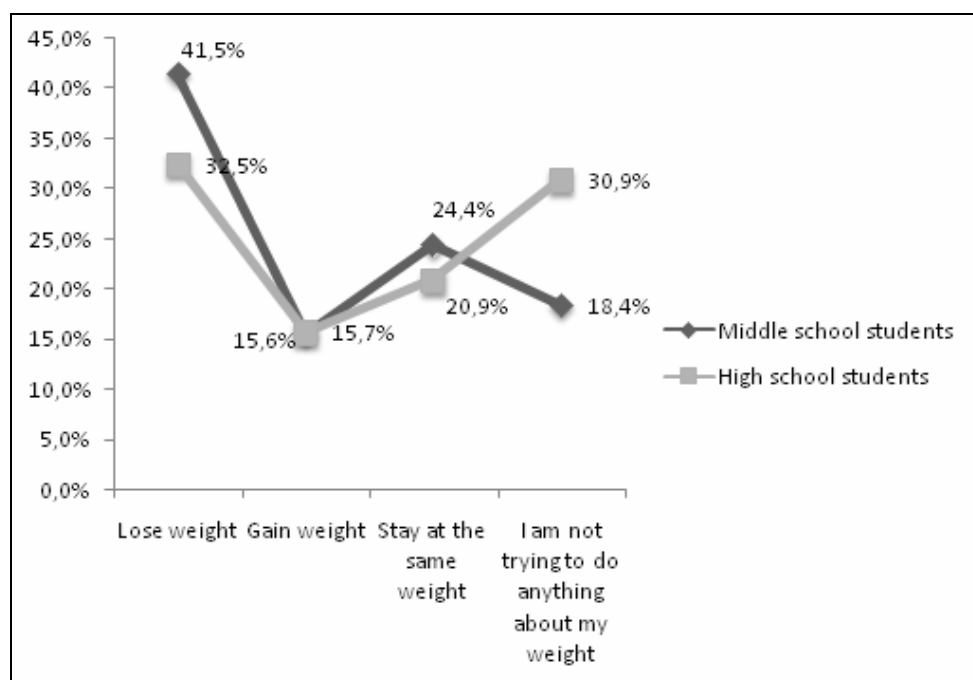
Figure 7. Percentage of adolescents who engaged in weight control practices by age

71.3% of overweight and obese students, 28.9% of healthy weight students and 9.6% of underweight students were trying to lose weight (Figure 8), with significant differences depending on weight status categories of students (p<0.001).
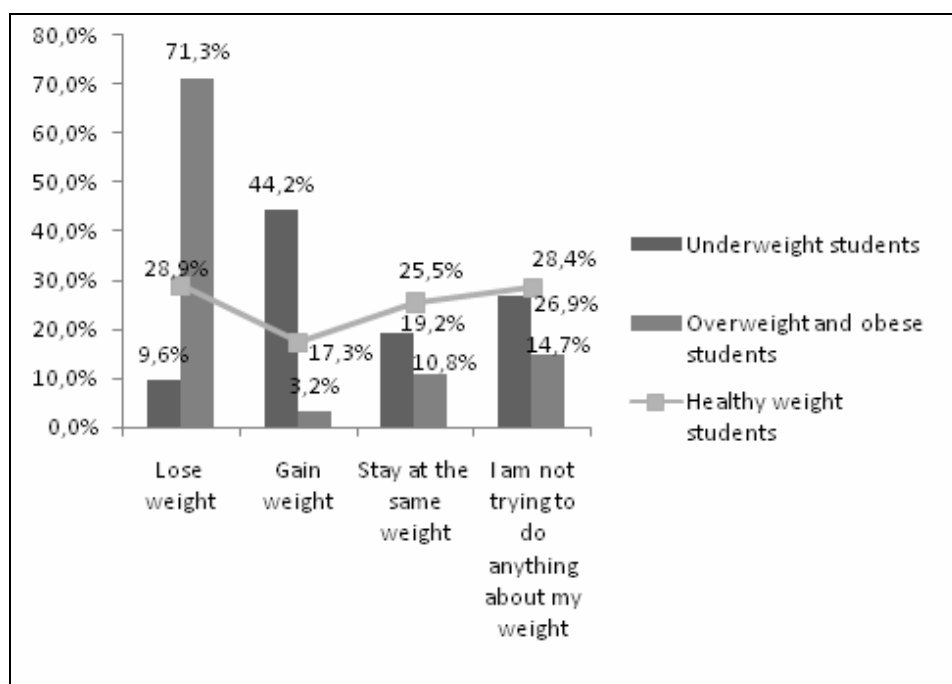
Figure 8. Percentage of adolescents who engaged in weight control practices by weight status categories
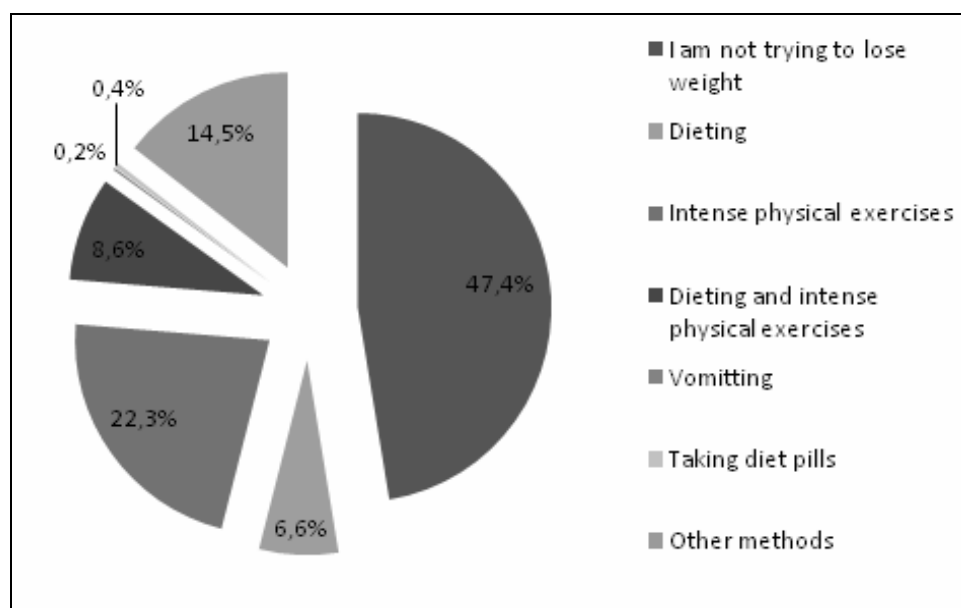
Figure 9. Percentage of students who engaged in behaviors to lose weight or to keep from gaining weight

During the 30 days preceding the survey, 52.6% of students had used some methods to lose weight or to keep from gaining weight. The most prefferred method was doing intense physical exercises associatted or not with dieting (Figure 9), especially at girls (p=0.0528)(Figure 10).
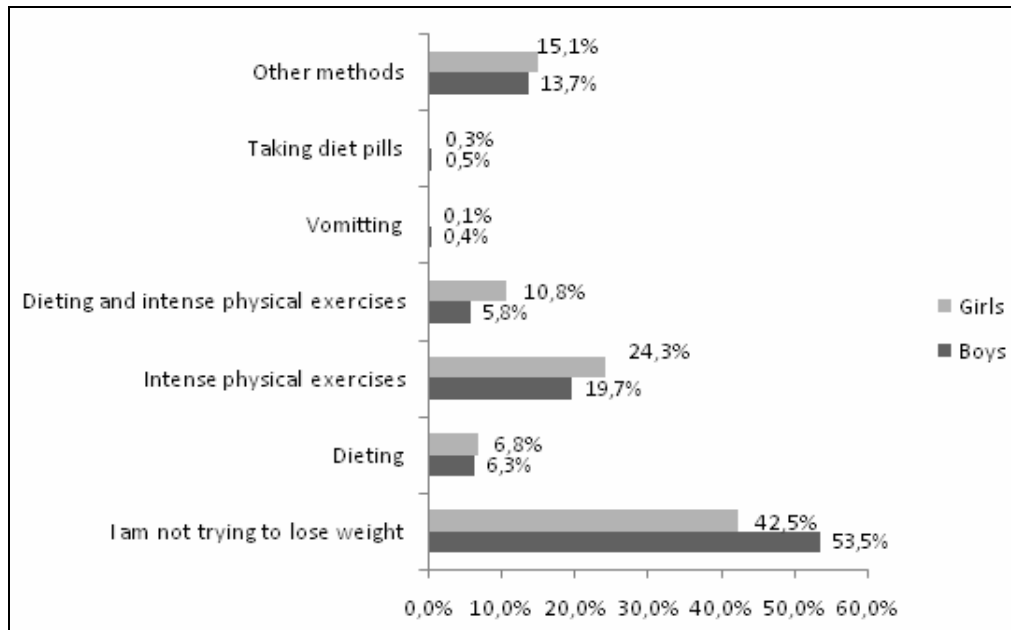
Figure 10. Percentage of students who engaged in behaviors to lose weight or to keep from gaining weight by sex

Unhealthy behaviors to lose weight or to keep from gaining weight, such as vomitting or taking diet pills were used by 0.6% of adolescents. We haven't found statistically significant differences between middle and high school students concerning preffered methods to lose weight or to keep from gaining weight (p=0.8907) (Figure 11).
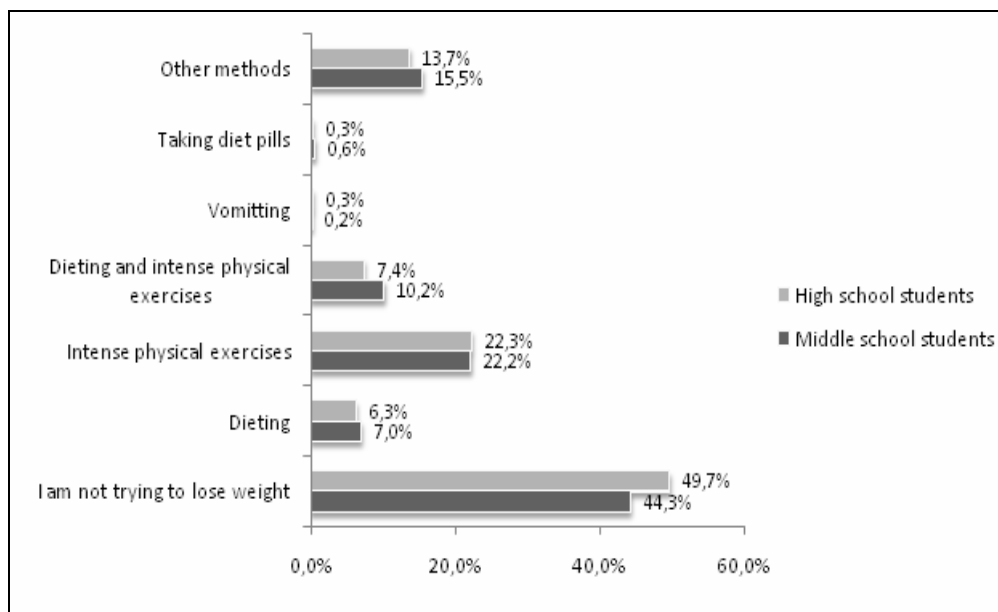

Figure 11. Percentage of students who engaged in behaviors to lose weight or to keep from gaining weight by age

Intense physical exercises associatted or not with dieting were used by 36.8% of overweight and obese students, 30.6% of healthy weight students and 7.7% of underweight students (Figure 12). There were significant differences among weight status categories (p<0.001).
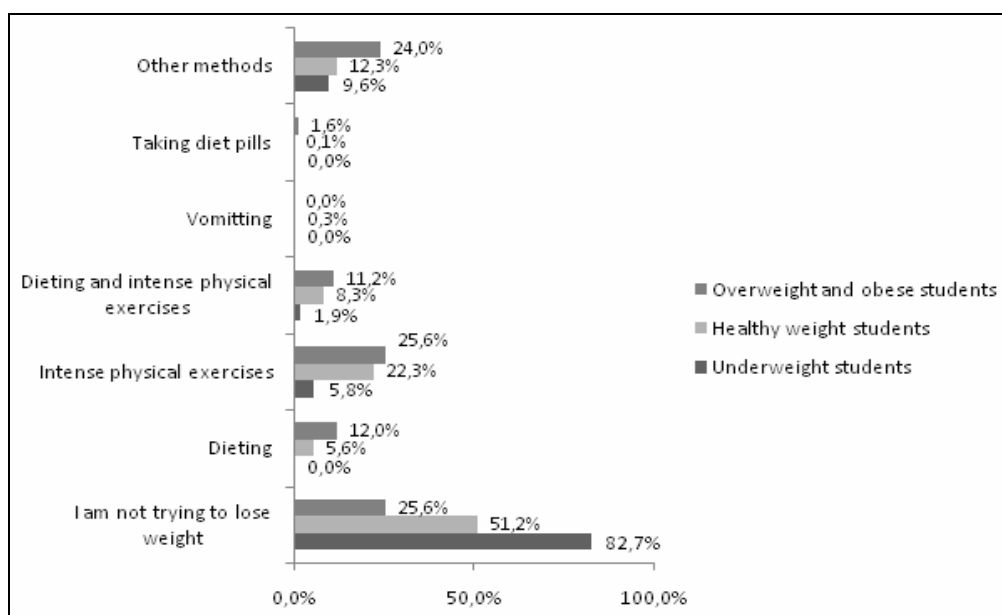
Figure 12. Percentage of students who engaged in behaviors to lose weight or to keep from gaining weight by weight status categories

Next we have conducted a SAS econometric analysis of the partial impact of body image perception and methods used to control weight on the risk of obesity and overweight. Table 1 reports the computed R-squared corresponding to each independent variable. We see that body weight perception is responsible for most of the reported variance of the risk of obesity and overweight (15%). The existence of efforts to control weight follows with 12% whereas the specific measures employed to control weight seems to have a lower impact on the variance of the investigated risk (7%).

Table 1.The intensity of the relationship between risk of overweight and obesity and its determinants

Independent variable (Label)	R-square
Body weight perception	0.15
Weight control measures	0.12
Measures to lose weight	0.07

Whereas informative, results in table 1 does not say anything about the direction of the relationship or its statistical significance. In order to find this information we have employed a LOGIT model. Statistically significant results are presented in Table 2.

Table 2. Main results of the LOGIT estimation

Independent variable (Label)	Class code	Coefficient	P-value
Body weight perception	0	-2.87	<0.0001
Body weight perception	1	-0.81	0.0178
Body weight perception	2	-1.28	0.0006

Weight control measures	0	1.32	0.0014
Weight control measures	1	-0.11	0.0242
Measures to lose weight	0	1.32	0.0022
Measures to lose weight	1	1.45	<0.0001
Measures to lose weight	2	3.4	0.0012

The variable that controls for the body image perception is labelled "Body weight perception". Three coefficients are reported, corresponding to three classes of that variable (very underweight, slightly underweight and about the right weight). All the coefficients are negative which means that the three classes are negatively associated with the risk of obesity and overweight. All three coefficients are statistically significant at high confidence values ($p<0.005$). The variable that controls for the existence of weight control measures is labelled "Weight control measures". Results show that when subjects are trying to loose weight the risk of obesity and overweight is higher ($\beta=1.32$). To the contrary, when subjects are trying to gain weight the risk investigated is lower, as expected ($\beta=-0.11$). Measures employed to loose weight are positively associated with the risk of obesity and overweight. Dieting (class label 0), vomitting (class label 1) and medication (class label 2) correspond to increased risks of overweight and obesity ($\beta>0$). All results accord with theoretical prediction of the impact of body image perception and weight control measures on the risk of overweight and obesity.

CONCLUSIONS

More than half of the surveyed youth did have misconceptions about their body. About one third of students described themselves as slightly or very overweight and 20% described themselves as underweight, with significant differences about body image perception depending on sex and weight status categories of students. During the 30 days preceding the survey, more than half of students had used some methods to lose weight or to keep from gaining weight, the most prefferred methods being healthy behaviors such as doing physical exercises associatted or not with dieting. Econometric analysis has documented the impact of body image perception and weight control measures on the risk of overweight and obesity. Reported R-squared show that all variables for which we have controlled are responsible for a significant variation of the investigated risk. LOGIT modelling shows that all coefficients have expected sign. Results are particularly informative for policy analysis since they report the partial effect of each factor on the risk of overweight and obesity. Differently put, coefficients do have ceteris paribus interpretation which obviously is an advantage over the traditional analysis based on correlations and the χ2test.

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SIGNIFICATION OF THE LAB ANALYSES FOR THE PATIENTS WITH HCV HEPATITIS IN THE PRESENCE OF THE EXTRAHEPATIC MANIFESTATIONS

Gaşpăr R. D.

Activity carried out in the Emergency County Hospital from Timisoara

REZUMAT

Ficatul este unic între organele corpului uman datorită capacităţii sale de regenerare, de reîntregire a celulelor care au fost distruse de o boală sau de o leziune pe termen scurt. Însă, dacă ficatul suferă leziuni repetate, pe termen lung (boli cronice) modificările devin ireversibile, interferând cu funcţia acestuia. Fiind un organ foarte activ, atunci când el este bolnav, întregul corp suferă. Hepatita cronică este o boală frecventă în intreaga lume, numărul cazurilor fiind în continuă creştere devine astfel o problemă de sănătate publică. Infecţia cu virusul hepatitic C (HCV) este depistată cel mai frecvent cu ocazia unor investigaţii de rutină sau ca urmare a unei simptomatologii polimorfe determinate de complicaţiile tardive şi ca urmare în puţine cazuri, a unei simptomatologii sugestive. În studiul prezent am exemplificat importanţa executării analizelor de laborator în paralel cu cele imunologice pentru manifestările extrahepatice ale pacienţilor cu hepatită cronică cu virus C. Numărul manifestărilor extrahepatice în hepatita cronică cu VHC este în continuă creştere şi rămâne un domeniu deschis de cercetare

Cuvinte cheie*: ficat, virus hepatic c, genom, aminotransferaze, compex imuno-circulant, complement C3*

ABSTRACT

The liver is unique among the organs of the human body due to its capacity of regeneration, of reintegration of the cells that have been destroyed by a disease or a short-term lesion. But, if the liver suffers repeated lesions, on long term (chronic diseases) the modifications become irreversible, interfering with its function. Being a very active organ, when it is ill, the entire body suffers. The chronic hepatitis is a frequent disease all around the world, the number of cases continuously increasing, becoming thus a public health issue. The infection with the hepatitis C virus (HVC) is discovered the most frequently during routine investigations or following a polymorphous symptomatology determined by the late complications and in a few cases as a consequence of a suggestive symptomatology. In the

present study we have exemplified the importance of execution of the lab analyses in parallel with the immunologic ones for the extra hepatic manifestations of the patients with C virus chronic hepatitis. The number of extra hepatic manifestations in the VCH chronic hepatitis is continuously growing and remains an open research field.

*   **Keywords:** liver, hepatitis C virus, genome, aminotransferases, circulate immune complexes, complement component C3.*
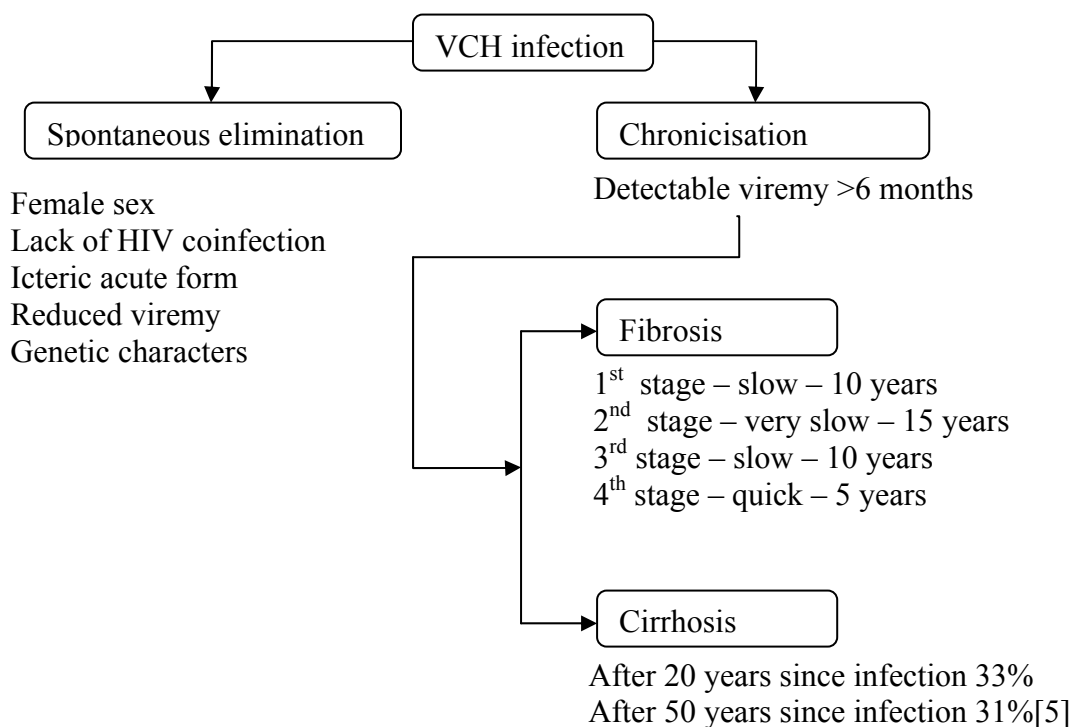
INTRODUCTION

The liver is one of the few organs, if not the only one, for which has been erected a monument [1,2]. This was inaugurated in 1987 in Balen, north of Spain, as a homage brought to the organ that accomplishes its functions in silence, without ever complaining, sacrificing itself. In fact, the monument represents an alcoholic liver and it was dedicated to the liver by a physician, with the declared purpose that the ones who see it significantly reduce the alcohol consumptions. Even if the liver is an amazing organ, powerful and resistant, with various capacities and surprising qualities, this doesn't matter that it is immune to all aggressions.

The advantages of living in a modern society are accompanied by a lot of inconvenient, among which a series of toxic substances to which the modern man is, voluntarily or involuntarily, exposed. The pollution of the air, water, the "pollution" of the aliments with various products, the phonic pollution are more difficult (or even impossible) to be avoided in a large city. Yet, is strange the choice of some of us to voluntarily participate in the additional intoxication of one's own body. How is the lung of someone who, while living in an already sufficiently polluted air, and adds a dose of "moderate"10 cigarettes a day? Or what "opinion" has the liver of a person who, although has fought every day with the metabolism of lipids in excess, against various alimentary E's, against multiple

chemicals hidden inside semi-prepared meals or even in fresh aliments, but over treated, must also deal a "moderated" dose

of, let's say 80 grams pure alcohol? The unfavourable effects of the alcohol consumption over the liver have been signalized since XVIth century [1,2,3]. Today in Western countries, where the infection with B virus and C virus has a more limited spreading, the alcohol consumption represents the main cause of the chronic hepatitis. Being exposed to a lot of toxic substances, this remarkable organ is able to regenerate, to protect itself and to replace the affected tissue. Even extended areas of parcelled necrosis (in the viral acute hepatitis, for example) can be totally recovered. The construction where the small lobes perform the same function, show that the moment a section is injured, another section shall takeover the function of the injured area until the latter could function again. Nevertheless, the liver is subject of many diseases that can harm its regenerating functions. Being a very active organ, when it is sick, the entire body suffers. The ancient Greeks saw the liver as the center of emotions and the place where the blood forms.

The viruses with hepatic tropism produce inflammatory processes where the liver is the target organ (Scheme 1). There are at least 5 viral agents responsible of the acute hepatic lesions: viruses A; B; C; E and delta. They have been identified, characterized and there are specific methods to detect them [4].

Scheme 1. Chronology of the main evolutionary stages in the VCH chronic hepatitis

```
                          ┌──────────────────┐
          ┌───────────────│  VCH infection   │───────────────┐
          │               └──────────────────┘               │
          ▼                                                   ▼
┌──────────────────────────┐                    ┌──────────────────────┐
│  Spontaneous elimination │                    │     Chronicisation    │
└──────────────────────────┘                    └──────────────────────┘
                                                 Detectable viremy >6 months

 Female sex
 Lack of HIV coinfection
 Icteric acute form                          ┌──────────────────┐
 Reduced viremy                              │     Fibrosis     │
 Genetic characters                          └──────────────────┘
```

1st stage – slow – 10 years
2nd stage – very slow – 15 years
3rd stage – slow – 10 years
4th stage – quick – 5 years

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                                             ┌──────────────────┐
                                             │     Cirrhosis    │
                                             └──────────────────┘
```

After 20 years since infection 33%
After 50 years since infection 31%[5]

The statistics show that over 80% of the persons infected with hepatitis C virus develop chronic hepatitis. Approximately a third part of them, if the affection remains untreated, will develop in less than 20 years from the infestation, hepatic cirrhosis, another third will progress towards cirrhosis in approximately 30 years from the infestation with hepatitis C virus and for a last third, the progress towards cirrhosis is so slow that there is little probability they will develop this disease in their lifetime [5]. The infection is often asymptomatic but once established, chronic infection can progress to scarring of the liver (fibrosis) and advanced scarring (cirrhosis) which is generally apparent after many years. In some cases, those with cirrhosis will go on to develop liver failure or other complications of cirrhosis, including liver cancer [6.7]. The hepatitis C virus (HCV) is spread by blood-to-blood contact. Most people have few, if any symptom after the initial infection, yet the virus persists in the liver in about 85% of those infected. Persistent infection can be treated with medication, peg interferon and ribavirin being the standard-of-care therapy [8,9]. The treatment of the C hepatitis disease primarily aims at curing –that is complete eradication of the virus and implicitly the increase of life quality. The second objective is to stop the evolution towards cirrhosis and hepatic cancer that is where the recovery is not possible. The treatment comprises three aspects:

1. diet – are recommended avoidance of and vitamin E cures;

2. vaccination – against hepatitis A virus, hepatitis B virus, and, annually, against influenza, as the overinfection can cause fatal complications;

3. antiviral medication [10].

Only 51% are cured overall. Those who develop cirrhosis or liver cancer may require a liver transplant and the virus universally recurs after transplantation [11]. Hepatitis C appears when blood infected with hepatitis C virus enters in the organism of an ill person. There are some groups that present an increased risk of contacting hepatitis C:

• persons who have suffered blood transfusions or organ transplants;

• persons suffering of haemophilia (more than 60% of the cases),
• users of injected drugs;
• hospital staff;
• children whose mothers are infected with hepatitis C virus;
• families of the infected persons;
• persons with multiple sexual partners; numerous tattoo and piercing users [12].

The Hepatitis C virus (HCV) is a small (50 nm in size), enveloped, single-stranded, positive sense RNA virus. It is the only known member of the hepacivirus genus in the family Flaviviridae [13]. There are six major genotypes of the hepatitis C virus, which are indicated numerically (e.g., genotype 1, genotype 2, etc.). The hepatitis C virus particle consists of a core of genetic material (RNA), surrounded by an icosahedral protective shell of protein, and further encased in a lipid (fatty) envelope of cellular origin [14]. Two viral envelope glycoproteins E1 and E2, are embedded in the lipid envelope.. Hepatitis C virus has a positive sense RNA genome that consists of a single open reading frame of 9600 nucleoside bases. At the 5' and 3' ends of the RNA are the UTR regions, which are not translated into proteins but are important to translation and replication of the viral RNA. The 5' UTR has a ribosome binding site (IRES - Internal Ribosomal Entry Site) that starts the translation of a 3000 amino acids containing protein that is later cut by cellular and viral proteases into 10 active structural and non-structural smaller proteins.
Replication of HCV involves several steps. The viruses need a certain environment to be able to replicate, and must therefore first move to such areas [15,16].
There is no vaccine against hepatitis C virus. As this virus is spread especially through blood, the only method of preventing the infection is the application of some rigorous measures of personal and health hygiene, in general:
• avoidance of syringe able drugs, of used needles or syringes;

• avoidance of using by more persons of some instruments that could have blood infected with hepatitis C virus: razors, toothbrushes etc;
• avoidance of tattoos or piercing in queer locations that does not present any guarantee,
• correct use of condoms with the occasion of every sexual contact with an unstable partner.

AIM

This theme is determined by the distribution of the cases with viral chronic hepatitis C in the County Clinical Hospitals from Caras-Severin and Hunedoara counties, with the aim to establish the frequency and character of the extra hepatic manifestations along with the presence of the haematological tests, the hepatic functional tests and the immunological ones. We also followed to establish correlations between age, sex, background, possible infecting moment and the extra hepatic manifestations.

WORKING HYPOTHESIS AND OBJECTIVES

It is important to recognize the association between HCV infection and the extra hepatic manifestations in order to perform the corresponding diagnosis tests. The study objectives have been the following:
- occurring of these manifestations in the chronic viral hepatitis at adults, as incipient form of the hepatitis and then their appearance during the disease evolution;
- identifying the presence of some clinical-biological links in patients with extra hepatic manifestations, regarding hematological tests, hepatic functional tests, immunological tests;
- establishing of the links between biochemical and immunological parameters

An important number of HCV infections can present concomitant extra hepatic manifestations, demonstrated to be the only

manifestation, their finding being important for diagnosis and treatment.

MATERIAL AND METHOD

As study material we considered the batch represented by 134 patients admitted in County Hospitals in the counties: Caras-Severin and Hunedoara with the diagnosis of C viral chronic hepatitis, with positive anti HCV antibodies divided as it follows:

-gastroenterology ward -59 cases
-nephrology ward-8 cases
-hematologies ward -7 cases
-medical ward I and II-60 cases

Each patient was drawn up a consultation sheet comprising personal data, personal and familial pathological antecedents, anamnesis and clinical data, the lab and the paraclinical results related to the HCV chronic hepatitis. The debut symptoms, the diagnosis moment, the way of finding the HCV infection and the epidemiological investigation with the establishment of the possible infecting moment on exclusive basis of own affirmations were taken into account.

Criteria of inclusion in the study:

– patients with HCV infection confirmed through ELISA test, IInd or IIIrd generation, with hepatic and extra hepatic manifestations.

Criteria of exclusion from the study:

– patients with concomitant infection with hepatitis B virus, HIV infection;

– patients with ethanolic hepatitis;

– patients with autoimmune hepatitis or with autoimmunity manifestations;

– patients with hepatic cirrhosis or hepatocellular carcinoma,

The serum evidence test of the anti HCV antibodies was of the type ELISA IInd and IIrd generation (Murex anti-HCV-version III, Menolisa (R) anti-HCV PLUS, ORTHO (R) HCV 3.0 ELISA).

Para clinical (lab) analyses have been performed at the moment of diagnosis and/or study admission and during the evolution. Among them we mention: hematological analyses (leucocytes, hemoglobin, and trombocytes), hepatic tests (transaminases, total proteins and proteic fractions, protrombine time, total and direct bilirubine, γ-glutamil-transferasis). In order to characterize from the immunological point of view the patients, were analyzed the values of the immune circular complexes (ICC), the C3 constituent of the complement (C3) and the serum levels of the immunoglobulin IgG, IgA and IgM. In each patient the obtained values have been listed depending on the age of the patient in increased values, normal values or decreased values. The analysis of these results has been carried out depending on the average value and the enlisting in those groups.

RESULTS AND DISCUSSIONS

The studied patient batch, comprising 134 cases with chronic hepatitis with anti HCV antibodies is compounded of 85 female patients (63 %) and 49 male patients (37%). In the carried out study we observed a predominant affectation of the age group 40-59 years old (27.16 %), followed by the age group 25-39 years old (25.92 %), data with statistical significance (p value = 0.0668). The average age at the studied batch was of 54.46 ± 13.15 years old. From the studied batch, 109 of the patients come from the urban environment (81%), while 25 patients from the rural environment (19%). Analyzing the transfusion antecedents it has been observed that from the total of 134 patients taken in the study, 9 patients (7%) recognized in their past a blood transfusion. From the total of 134 patients with C viral chronic hepatitis, 90 patients had personal antecedents of surgical interventions (67%). Starting from the commencement of the chronic hepatitis in the patients from the studied batch it has been observed that most part of the cases has been identified accidentally (76 cases, 56.72%). At the beginning the extra hepatic manifestations (coetaneous, muscular and hematological)

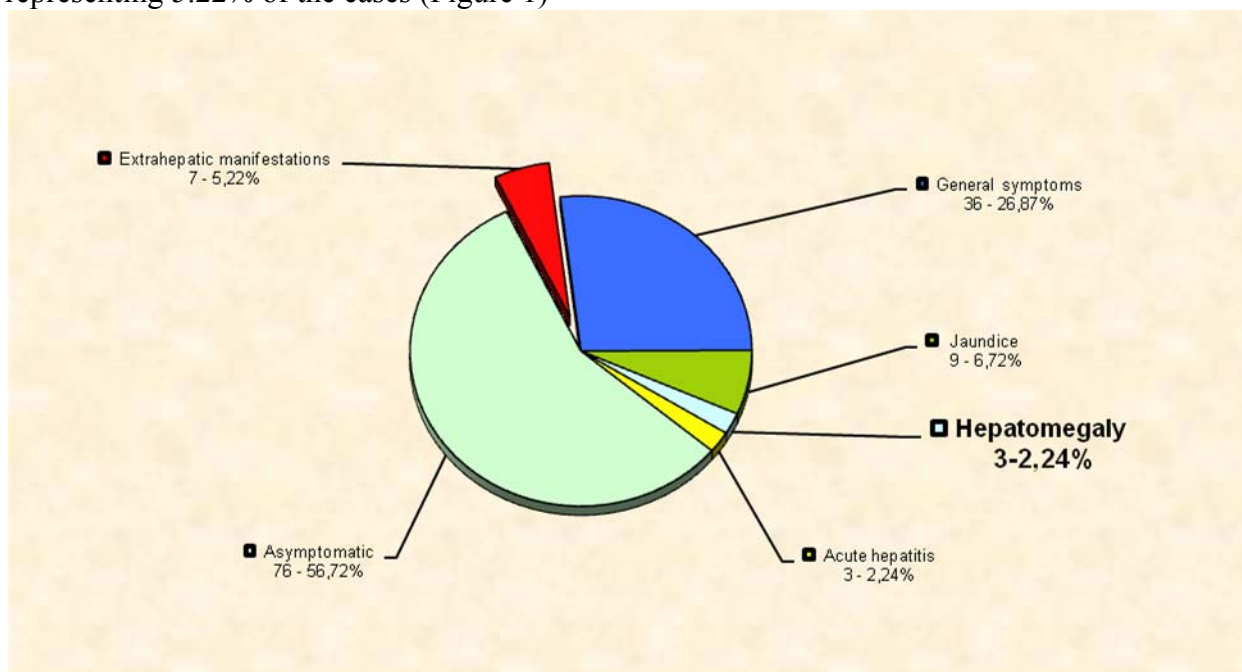have been observed in 7 patients, representing 5.22% of the cases (Figure 1)

Figure. 1 Extra hepatic manifestations frequency at the beginning of the chronic hepatitis

During the chronic hepatitis evolution with C virus it has been observed that the extra hepatic manifestations frequency was of 35.07% from the cases, in our study (Figure 2). The most frequent have been the hematological manifestations (18.66%), coetaneous (9.70%), joint manifestations (5.22%), renal manifestations (1,49%).
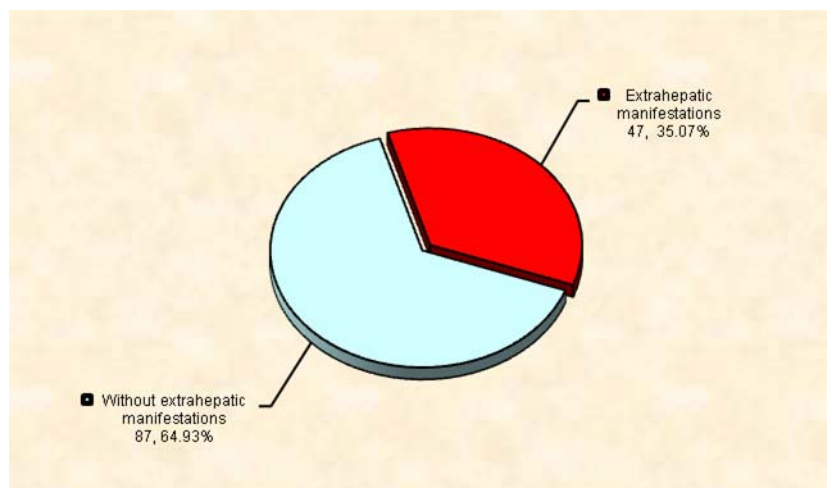

Figure. 2 Extra hepatic manifestations frequency in the chronic hepatitis evolution

Extra hepatic manifestations at the studied group of people having chronic viral hepatitis C were present at a third of them, what means that these manifestations appear with a high frequency. For those having extra hepatic manifestations there are important differences regarding the hemoglobin medium level (13.0 mg/dl towards 14.2 mg/dl to those that don't have extra hepatic manifestations, p=0.000058), of the platelets (204.733/mm3 towards de 240.784 /mm3, p=0.010337) and the C3

medium value (lower, 77,2 mg/dl from those having extra hepatic manifestations, towards 90.1 mg/dl from those that don't have extra hepatic manifestations p=0.007897) (Table 1, 2). In the rest, the notices differences, for example the lowest level of the transaminasis at those having extra hepatic manifestations (but situated at 2 x of the normal value) are insignificant from statistic point of view. From our group of patients, a number of 24 patients (64.86%) have been identified accidentally, without existing evocative manifestations for the chronic hepatitis, while at the rest of the patients the manifestations were similar with those of the other patients, with the mention that the frequency of the acute hepatitis manifestations is greater (5,40% towards 2,24%), sclerotegumentary jaundice is more frequent (13.51% towards 6.72%).

Table 1. Patients having extrahepatic manifestations

HEMOGLOBIN		13,0 MG/DL
PLATELETS		204,733/MM3
C3 MEDIUM LEVEL		77.2 MG/DL
CIC MEDIUM LEVEL		261.5×10^{-3} UF

Table2. Patients without extrahepatic manifestatis

HEMOGLOBIN		14.2 MG/DL
PLATELETS		240,784/MM3
C3 MEDIUM LEVEL		90.1 MG/DL
CIC MEDIUM LEVEL		224.5×10^{-3} UF),

Regarding the comparative analysis of the viral load in the cases with hepatic and extra hepatic manifestations, it was demonstrated that in the 134 cases of C virus chronic hepatitis being studied, the viral load under 800,000 UI/ml was encountered at 68 patients (51%) having hepatic manifestations versus 29 patients (19.40 %) for those having extra hepatic manifestations; the viral load is of 800,000 UI/ml for 41 patients (30.59 %) having hepatic manifestations versus 27 patients (20.14 %) that have extra hepatic manifestations, without statistical signification (p value = 0.1; Odds ratio = 0.58 and Relative risk = 0.83). In the same time, it hasn't been noticed a correlation between the viral load and extra hepatic manifestations, in the sense that a greater viral load associate with other lesions except for the hepatic ones.

From immunology point of view the greater majority of the patients had IgG normal values, only 34.33% of them had high values. The IgA has been lower only for 13.43% of the cases. The majority of the patients had IgM values in normal limits. Most patients (61.94%) presented CIC high values, the medium value being of 237.5 ± 191.2 x10-3 UF. (Fig3.) C3 level was lower at 61.94% from the patients (Fig4.). The medium value of C3 was of 85.6 ± 26.1 mg/dl. There are no significant differences between the immunologic parameters taking into consideration the sex, only the IgM medium value is higher at women than at men.
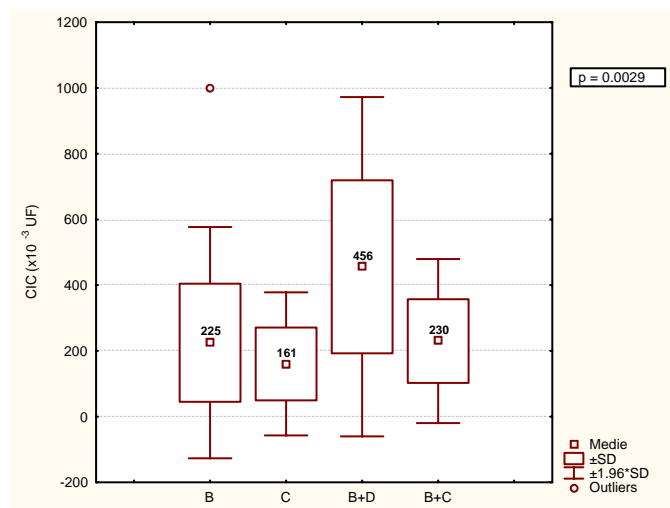
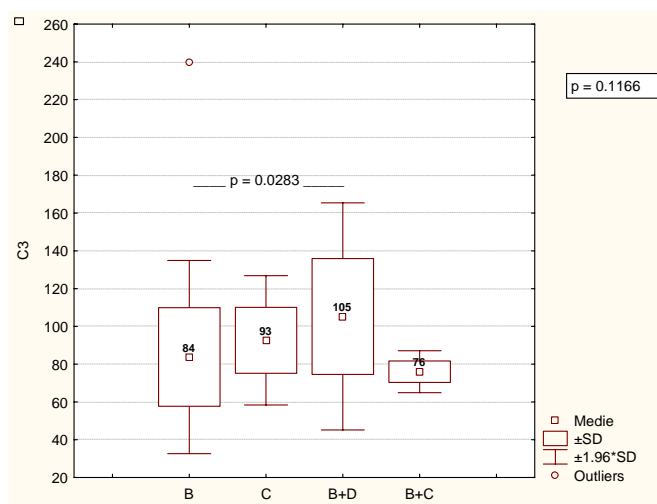**Figure. 3. CIC average value taking into consideration the etiology**

Figure. 4. Medium value of C3 taking into consideration the etiology
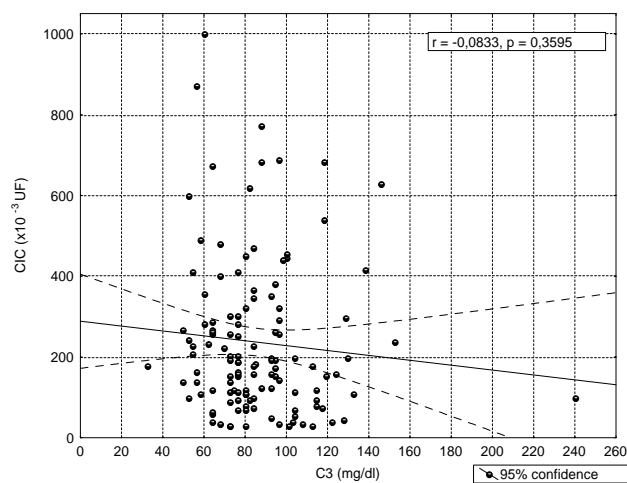

Figure. 5. Correlations between the CIC and C3

We have also analyzed if there is a connection between CIC, C3 and IgG, IgA and IgM values. The existence of a connection between CIC and C3 has been discussed many times. In our group there were 53 patients having CIC high values and lower values of C3, representing 39,55% from the patients. From statistic point of view, the connection between CIC-C3 was not relevant (p=0.3595); (Fig.5). By means of these results, we demonstrated the existence of some important connections between the CIC high level and the IgG increment level (with very good statistic signification) and between CIC and IgM (p=0.017150). The rest of the connections between the immunological parameters are insignificant.

CONCLUSIONS

1. In our study, the existence of extra hepatic manifestations has been presented at a third of the studied patients, fact that shows that these extra hepatic manifestations appear with a high frequency.

2. In the majority of the cases, the diagnosis of chronic hepatitis was accidentally discovered, the extra hepatic manifestations frequency being of 5.22% from the cases at the beginning of the disease; in its evolution, the extra hepatic manifestation frequency is bigger (approximately a third), including renal, coetaneous, joint, endocrine manifestations, but also associated manifestations (cardiac and gastrointestinal).

3. For the majority of the patients, the diagnosis of hepatic and extra hepatic disease has been established in the same time, the patient coming to the doctor having the extra hepatic symptoms, and after making some laboratory investigations it has been established also the existence with C hepatitis virus infection.

4. The normal value of the transaminasis can delay the diagnosis with the hepatitis C virus infection. That's why it is necessary to test the VHC antibodies at the cases having extra hepatic manifestations.

5. C viral chronic hepatitis is associated with characteristic immunological humoral modifications: IgG and CIC increment, C3 decrease, modifications showing the intense lesion activity, the hepatic functional deficit, all this having an important connection with the cholestasis level (γ-GT).

6. The level of the C3 complement was lower to the patients having extra hepatic manifestations, and CIC value higher, these differences being explicable using the pathogenesis mechanism of the extra hepatic manifestations in the chronic hepatitis, towards the role of the immune complexes and the complement consumption.

7. The immunological modifications determined are the IgG and C3 values increment and the decrease of the CIC value.

8. The extra hepatic manifestations number in the chronic hepatitis with VHC is in a continuous acceleration and rests an opened domain for the research.

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ACUTE MORBIDITY PARTICULARITIES IN THE CASE OF HIGHSCHOOL PUPILS OF TIMISOARA

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REZUMAT

Morbiditatea acută în cursul anilor de şcoală este un indicator direct al stării de sănătate. Afecţiunile acute reprezintă una dintre cele mai frecvente cauze ale bolilor copiilor şi adolescenţilor în comunităţi. Studiul a cuprins 10 071 elevi din Timişoara cu vârstele între14-19 ani, 5224 băieţi şi 4847 fete şi s-a desfăşurat în perioada 2001-2008. În cazul elevilor cu vârstele între 14-19 ani, într-o perioadă de 8 ani, au fost evidenţiate 11 categorii de afecţiuni acute. Au existat 26 868 cazuri de boală, cu un raport de 0,79/1 băieţi la fete. Din punct de vedere al frecvenţei, pentru întregul lot, primele cinci categorii de afecţiuni acute au fost: infecţii acute ale tractului respirator, 20,4%; probleme dentare, 14,3%; traumatisme acute, 13,4%; probleme ginecologice, 10,9%; probleme hematologice, 10,5%. Eficienţa activităţii medicale a fost măsurată prin calcularea raportului dintre numărul de cazuri confirmate prin teste de laborator şi numărul de cazuri trimis pentru investigaţii; rezultatele au arătat o potrivire de 80% între diagnosticul iniţial şi diagnosticul de laborator pentru întregul lot.

Cuvinte cheie*: elevi, morbiditate acută, eficienţa activităţii medicale*

ABSTRACT

Acute morbidity during school years is a direct indicator of the health state. Acute diseases represent one of the most frequent causes of child and teenager disease in communities. The study comprised 10071 pupils from Timisoara at the ages of 14-19, 5224 boys and 4847 girls and it was carried out during 2001-2008. In the case of pupils with the ages between 14-19, within an 8 year period, 11 acute diseases categories have been found. There were 26868 cases of illness, with a ratio of 0.79/1 boys/girls. From the point of view of frequency, for the whole lot, the first five categories of acute diseases were: acute infections of the respiratory tract, 20.4%; dental problems, 14.3%; acute trauma, 13.4%, gynaecological problems, 10.9%; haematological problems, 10.5%. The efficiency of medical activity was measured by calculating the ratio between the number of confirmed cases through laboratory tests and the number of cases sent for investigations; the result was an 80% match between the first diagnosis and the laboratory diagnosis for the whole lot.

Key words*: pupils, acute morbidity, efficiency of medical activity*

INTRODUCTION

Analysing morbidity within a community offers the possibility of appreciating the individual resistance capacity as well as an evaluation of the global health state within child and teenager communities.

Acute diseases are one of the most frequent causes of child and teenager disease in communities, with the potential consequence of affecting the health state on a long term basis, at the same time reducing physical development and neuro-psychical maturity and puberty. If the acute morbidity from within the community develops, an analysis of the associated risk factors should be performed within family and school environment.

The study allows keeping in the spotlight the evaluation of the health state of pupils both at a national and regional level, through acute morbidity.

The objectives of the study were: evaluation of acute morbidity in school communities as an indirect indicator of the health state: frequency and specific occurrence of acute diseases, efficiency of medical activity for acute morbidity; creating a data base as a support for training programs in the sense of a healthy life style, of preventing and curing acute diseases.

METHODOLOGY

SUBJECTS

The lot of pupils from Timisoara which was taken into consideration was composed of 10071 pupils from three high schools during the period 2001-2008. Within the lot, the distribution according to sex was the following: 48.5% boys and 51.5% girls. The ages of the high school pupils within the lot were between 14-19.

METHOD

The study of acute morbidity is possible in the following forms of medical activity: epidemiological selection, medical examinations at the school medical offices,

medical examinations outside the school, special medical action [1,2].

Indicators of acute morbidity:

- Specific morbidity as a result of disease, calculated with the formula:

(Number of new sick cases 1 disease / Number of examined children) X 100

- Frequency of a disease, calculated with the formula:

(Number of cases 1 disease / Total number of diseases) X 100

- Similarity between the first diagnosis made by the school doctor and the diagnosis of the specialist, calculated with the formula:

(Number of sick cases confirmed / Number of sick cases sent for investigation) X 100

RESULTS AND DISCUSSIONS

1. **General dynamic of acute disease cases, in the period 2001-2008 (Figure 1, 2)**
2.

For the acute diseases which have been diagnosed, we calculated the specific occurrence for each category of problems, for the entire community and the two sexes, for each study year.

Within the research period, 2001-2008, the percentage of acute disease cases for pupils in Timisoara aged 14-19 was between 8.9-13.7%. From the point of view of the sexes, in what the girls are concerned, the frequency of disease was always higher in comparison with the boys, with a difference between 1.6 and 27.4 percent.
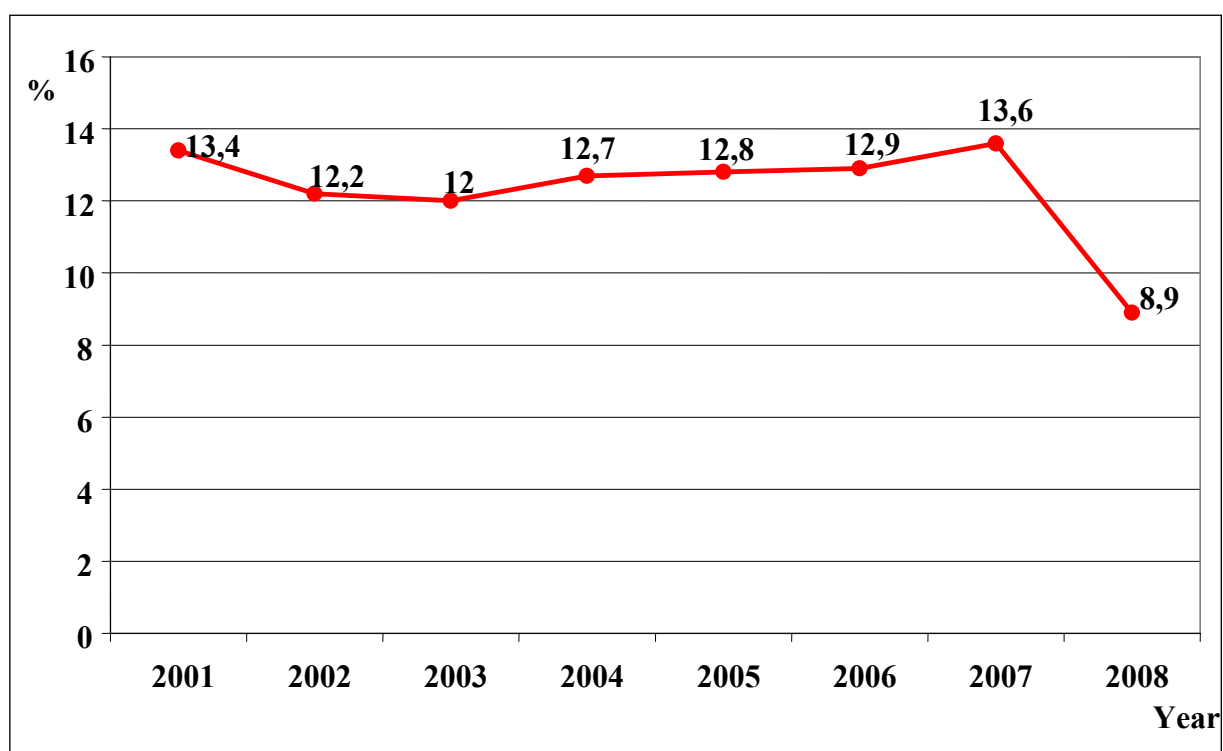
Figure 1. The percentage of acute disease cases for pupils in Timisoara aged 14-19, during the period 2001-2008, for the whole lot
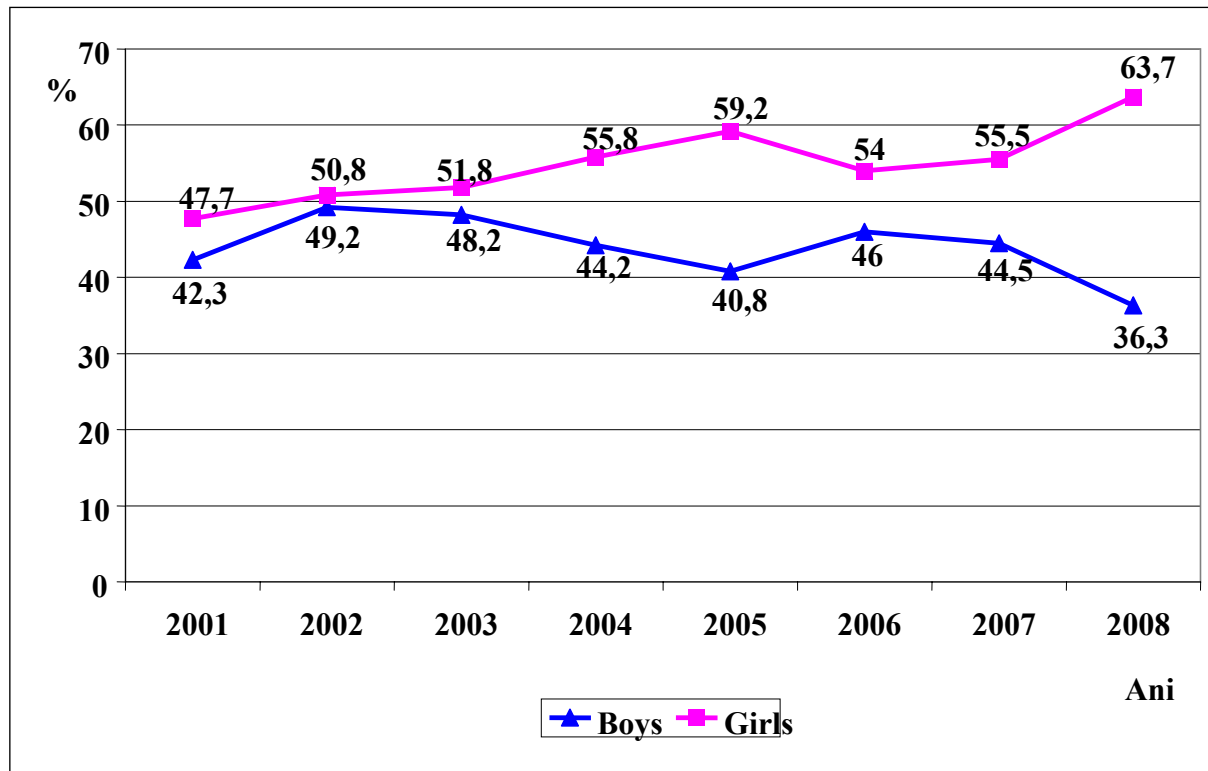

Figure 2. The percentage of acute disease cases for pupils in Timisoara aged 14-19, during the period 2001-2008, comparison of sexes

2. Frequency of acute diseases

During the period 2001-2008, pupils aged 14-19, 11 categories of acute diseases were diagnosed, with a total of 26868 sick cases, 11879 for boys and 14989 for girls. According to frequency there resulted the classification of the categories of acute cases.

Frequency of acute diseases for the whole lot (Figure 3): acute respiratory tract infections, 20.4%; dental problems, 14.3%; acute trauma, 13,4%; gynaecological problems, 10.9%; haematological problems, 10.5%; skin problems, 9.7%; digestive problems, 8.1%; neurological and psychiatric problems, 4.6%; rheumatologic problems, 3,1%; ORL problems, 2.3%; eye disease, 2.2%.
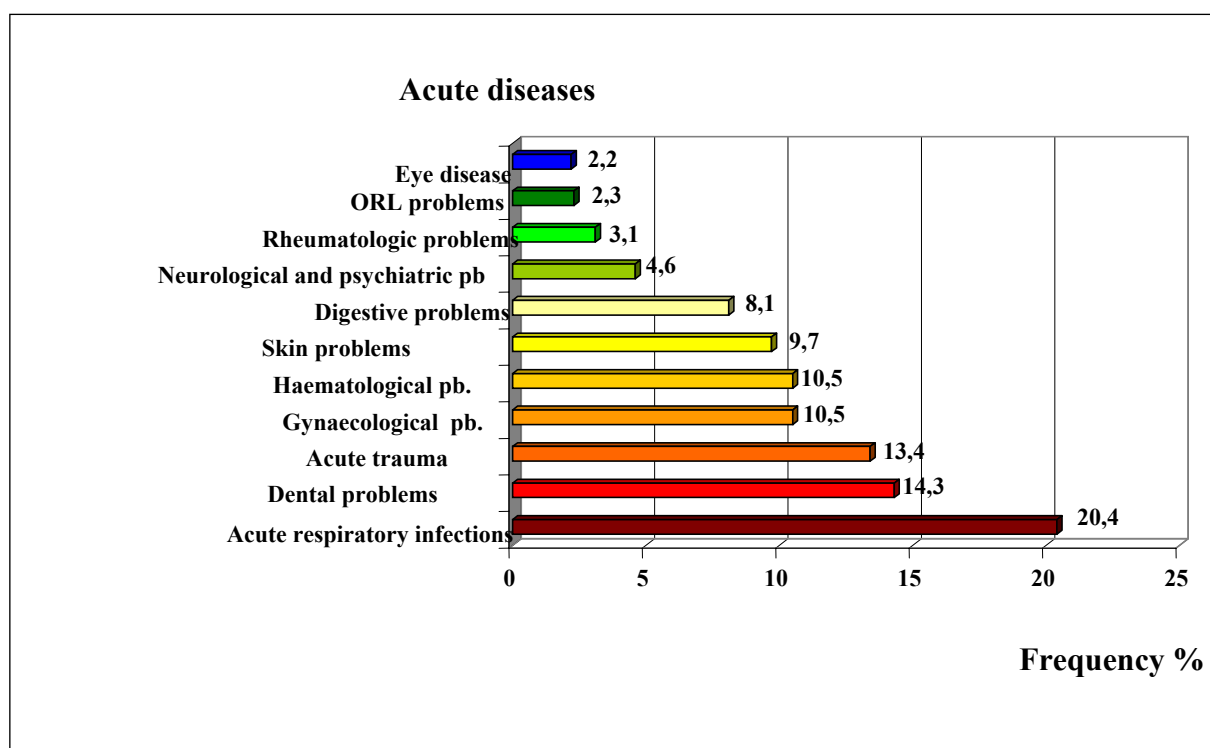
Figure 3. Frequency of acute diseases for pupils aged 14-19

Frequency of acute diseases for the lot of boys (Figure 4): acute respiratory tract infections, 23.5%; acute trauma, 21.5%; skin problems, 13.4%; dental problems, 11.4%; digestive problems, 10.5%; haematological problems, 10.1%; ORL problems, 2.6%; neurological and psychiatric problems, 2.4%; eye disease, 2.1%; rheumatologic problems, 1.9%.

Frequency of acute diseases for the lot of girls (Figure 5): gynaecological problems, 19.5%; acute respiratory tract infections, 18%; dental problems, 16.7%; haematological problems, 10.9%; acute trauma, 7%; skin problems, 6.8%; digestive problems, 6.2%; neurological and psychiatric problems, 6.2%; rheumatologic problems, 4%; eye disease, 2.2%; ORL problems, 2%.
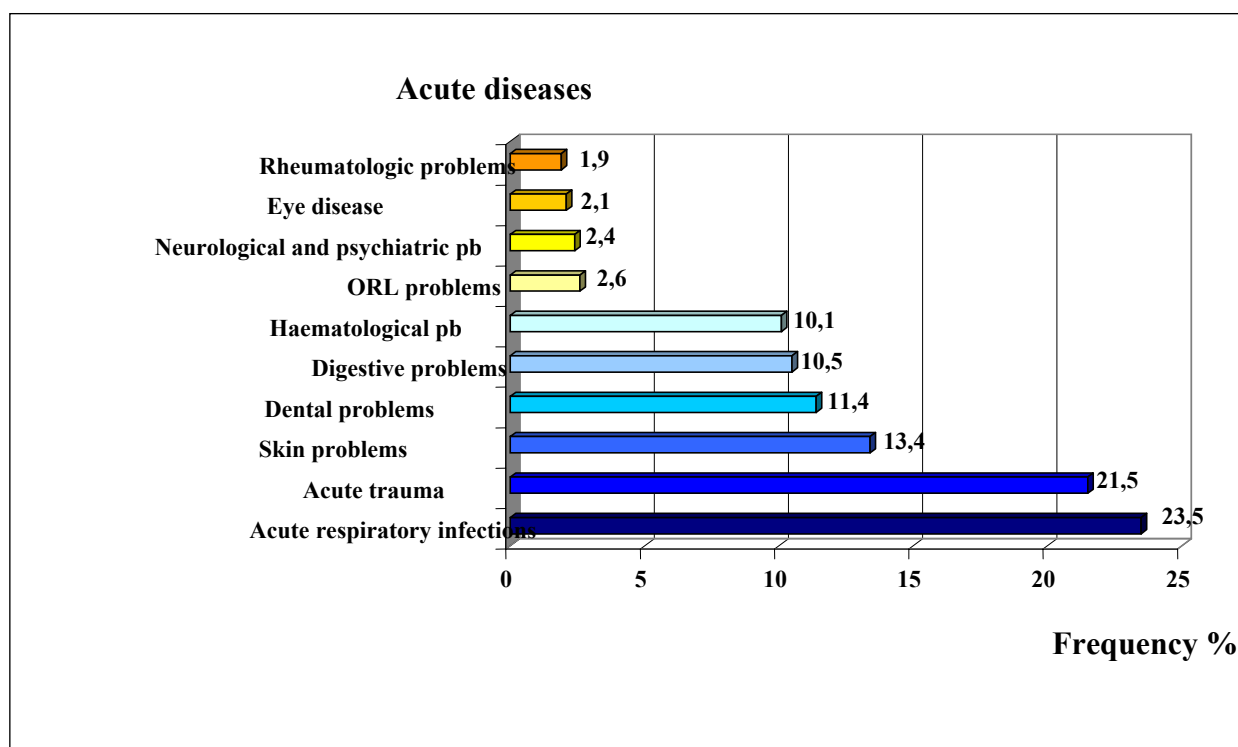
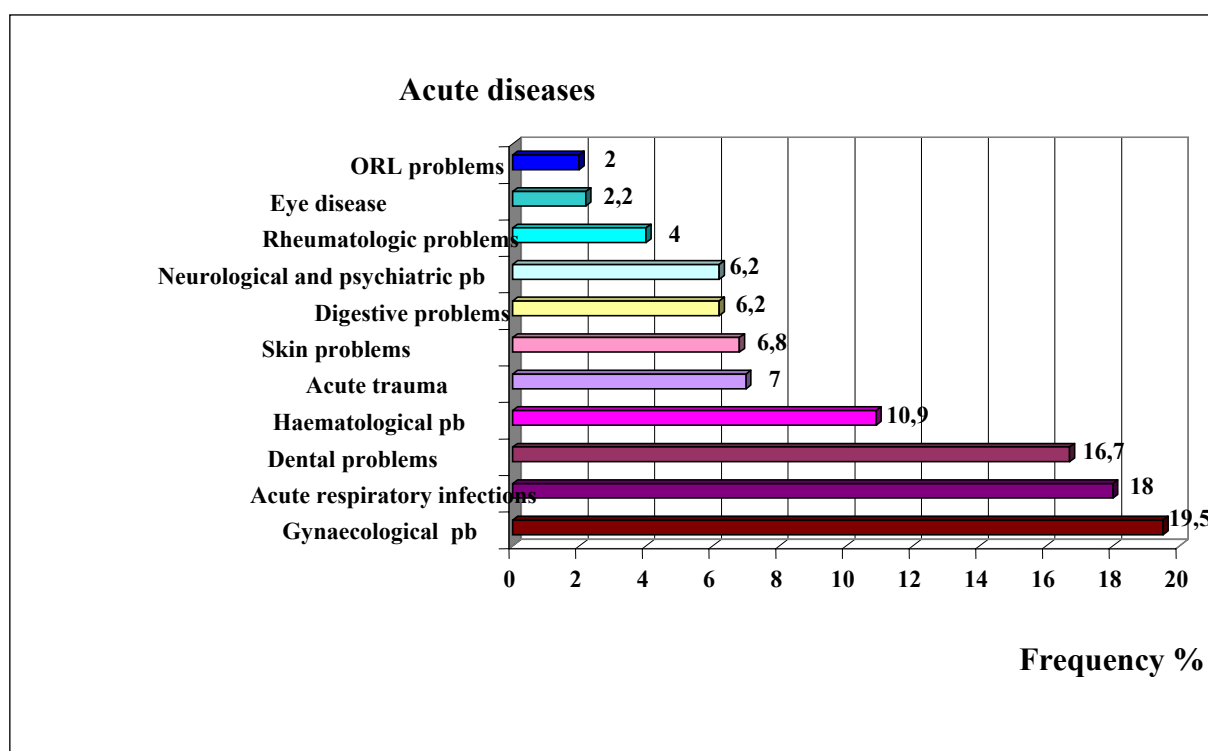**Figure 4. Frequency of acute diseases for boys aged 14-19**

Figure 5. Frequency of acute diseases for girls aged 14-19

3. Specific occurrence in acute respiratory infections (Figure 6)

Specific occurrence in the case of acute respiratory infections was between 7.3% in 2005 and 28.8% in 2002. The specific occurrence calculated for boys was between 10.5% and 35.4%, and for girls between 4.5% and 32.7%.
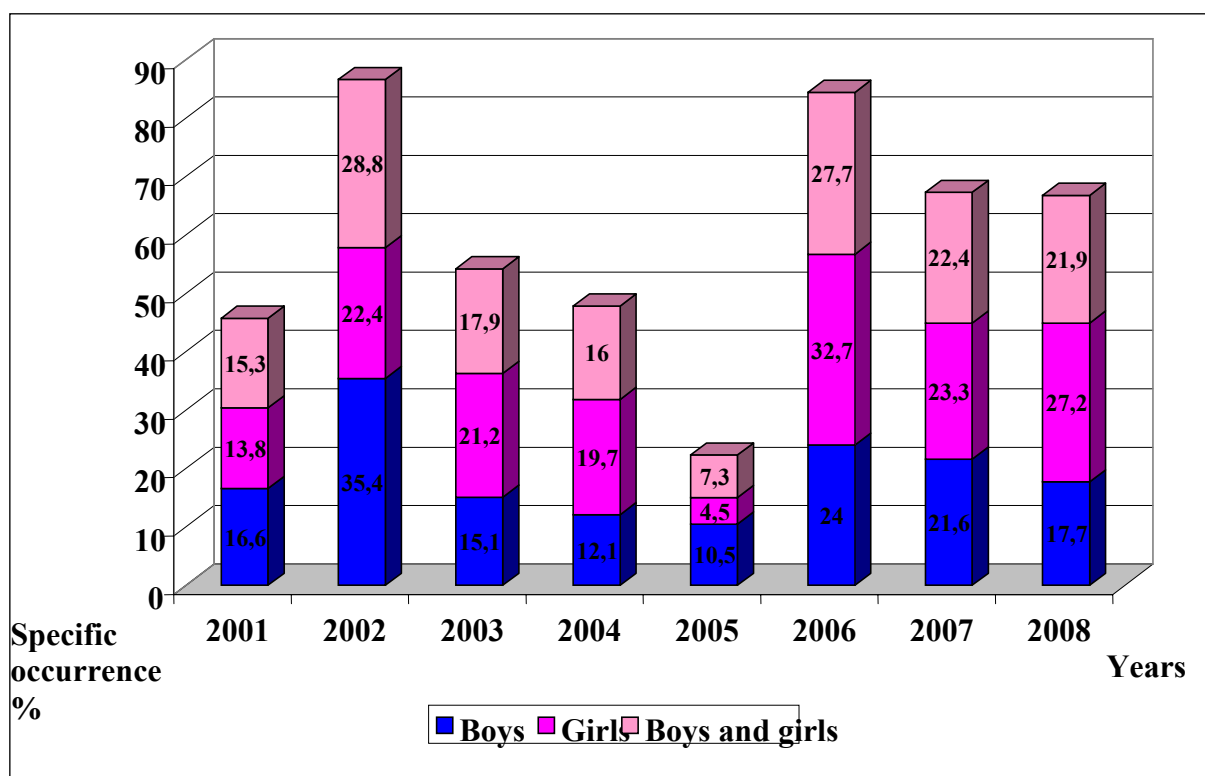
Figure 6. Specific occurrence of acute respiratory infections in superior and lower tracts, period 2001-2008

Acute respiratory infections are still the first cause of child infectious disease, no matter the level of development of a country. They represent the first cause of morbidity (around 50%) of the total examinations performed within the school medical offices [3-5].

For a pupil, the frequency of sickness is of 3-4 times/year, being equal to that of the adult.

From the total number of acute respiratory infections, 95% affect the superior respiratory tract, resulting mostly in light clinical forms, usually without fever. The rest of 5% represent infections of the lower respiratory tract, with more severe medical descriptions which in most cases require admittance into hospital.

The superior and lower respiratory tracts are affected successively or at the same time. Approaching respiratory infections from an anatomical point of view is useful in practice, both for a clinical presentation of the problems and for diagnosis, including the etiological one, for therapeutic direction and diagnosis.

The main entities of the respiratory tract infections are: rhinitis, pharyngitis (pharingo-amygdalitis, amygdalitis, adenoiditis), otitis, sinusitis and less frequent, abscess retropharingitis, periamygdalitis.

Other respiratory tract infections are acute laryngitis, laringo-traheo-bronchitis and pneumonia. On the whole, 90% of these infections are viral [6]. Most superior tract respiratory infections are not complicated and easy to diagnose. The main problem in diagnosis is establishing if the infection is caused by bacteria or not [7,8]. Other frequent respiratory problems are allergic bronchitis asthma, post-streptococci syndrome [9,10]. Air chemical aggression may represent risk factors for respiratory infections for children and teenagers [11-13].

4. Specific occurrence in dental problems (Figure 7)

Specific occurrence for dental problems was between 9.6% in 2008 and 18.7% in 2007.

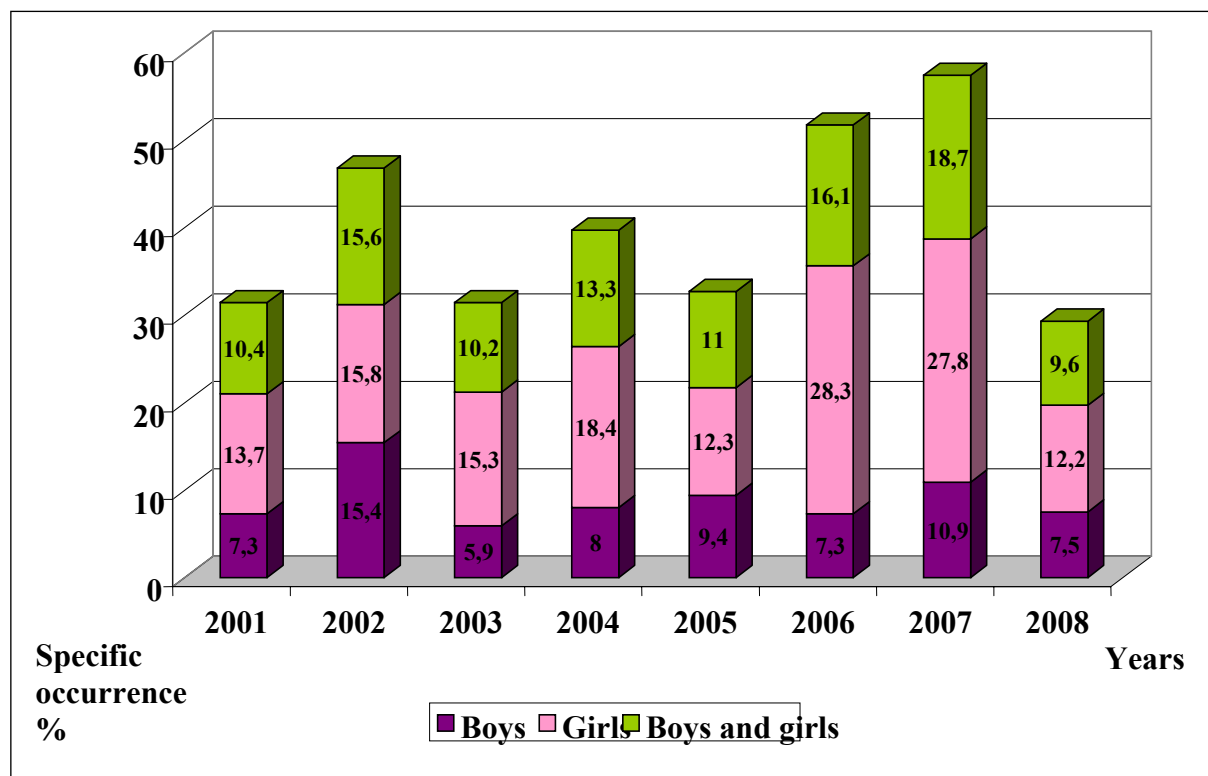The specific occurrence calculated for boys was between 5.9% and 15.4%, and for girls between12.2% and 28.3%.

Figure 7. Specific occurrence in dental problems, period 2001-2008

Dental problems. Dental development and eruption takes place during a very long period of time, beginning from the sixth week of pregnancy and ending at age 12 (with the exception of the wisdom molar) [14,15].

As a medical science, stomatology believes in controlling the disease of the mouth but it is still dependant on paediatricians in influencing patients and parents in understanding the dental and maxillary system.

Tooth cavity in case of children worsened greatly during the latest decades [16,17]. In Romania, 90-95% of children aged between15 and 17 have at least one tooth

destroyed, missing or obturated. Early loss of teeth results in loss of space not only by migration but also by lowering of the antagonist teeth, chewing problems [18], psychological problems, pains, infections [19,20].

Other frequent problems for this age are: dental abscess, gingivitis and parodontosis, dental pains [21,22].

5. Specific occurrence in acute trauma (Figure 8)

Specific occurrence in acute trauma was situated between 7.3% in 2008 and 21.0% in 2002. Specific occurrence calculated for boys was between 8.0% and 34.0%, and for girls between 4.4% and 14.0%.
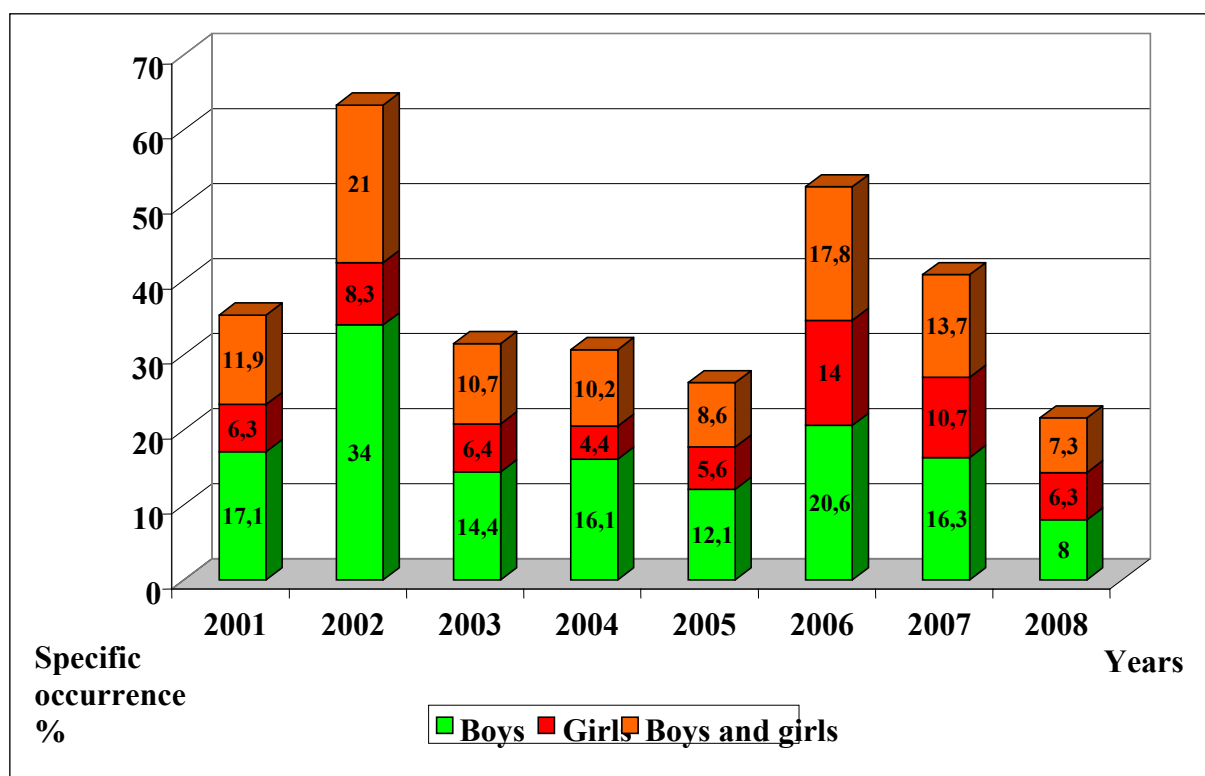
Figure 8. Specific occurrence in acute trauma, period 2001-2008

The most frequent acute trauma are fractures, concussions, cut, incised wound, wounds resulted by crushes, hits or cuts (made by knives, glass), hits by blunt objects [23-25]. The most important are accidents and physical aggression.

Acute trauma can be seen at children, no matter their age.

Trauma to the head can be accompanied by strokes [26,27].

Bone trauma is very frequent and is represented be sprains, luxations and fractures. This type of accidents may be the result of gymnastics classes or playing rough sports during breaks, especially with older pupils.

Traffic accidents are more frequent [28].

6. Laboratory tests dynamics (Figure 9)

For a certain and differential diagnosis of acute problems in the case of teenagers aged between 14-19 from this study, 3630 laboratory tests were performed, between 109 and 638 per study year, and for the two sexes, 1600 for boys and 2030 for girls.
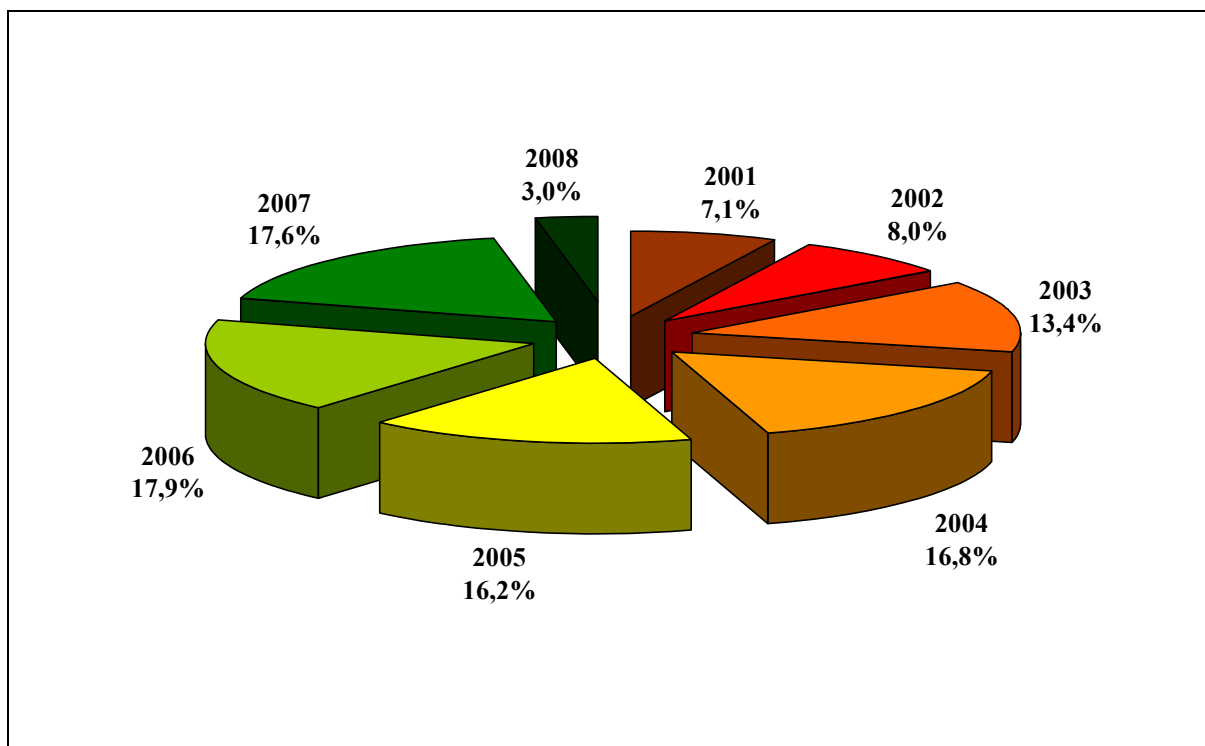
Figure 9. Laboratory tests percentage for pupils aged 14-19

In order to evaluate the efficiency of the medical activity in the case of acute diseases, the ratio between the number of confirmed cases by the laboratory and the number of children sent to be investigated was calculated as a percentage.

The result was similar diagnosis for 80% of the cases for the whole lot of teenagers aged between 14-19, 78.9% for the lot of boys and 80.9% for that of girls (minimum 75% similarity represents an efficient medical activity).

CONCLUSIONS

Acute morbidity during school years is a direct indicator of the health state. Acute diseases constitute one of the most frequent causes of child and teenage illness within communities. The diagnosis of acute diseases was possible by epidemiologic selection and medical examinations within schools medical offices and outside school as well as during special medical actions. Calculating statistical indexes of frequency and occurrence allows for a characterisation of acute morbidity.

Frequency of acute diseases. In the case of pupils aged 14-19, within an 8 year long period, 11 categories of acute diseases have been diagnosed. The number of sick cases was of 26868, with a ratio of 0.79/1 boys/girls.

From the point of view of frequency, the first three categories of acute diseases were:
- for the whole lot: acute infections of the respiratory tract, 20.4%; dental problems, 14.3%; acute trauma, 13.4%
- for boys: acute infections of the respiratory tract, 23.5%; acute trauma, 21.5%; skin problems, 13.4%
- for girls: gynaecological problems, 19.5%; acute infections of the respiratory tract, 18%; dental problems, 16.7%; haematological problems, 10.9%; acute trauma, 7%.

The efficiency of the medical activity for acute diseases was defined by a similarity between the first diagnosis and the laboratory confirmed diagnosis in 80% of the whole lot.

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