SOME EPIDEMIOLOGICAL ASPECTS REGARDING TRAUMA CAUSING EVENTS

Fabian T.C.¹, Brinzan L.M.²

1. Deva County Hospital, Emergency Department

2. Deva County Hospital, Emergency Department

REZUMAT

Rănirile accidentale sunt o cauză majoră de dizabilități și deces prematur la nivel mondial. Prezentăm date epidemiologice privind cazuri de incidente care au primit îngrijiri medicale oferite de personalul medical de la o unitate SMURD din județul Timiș, în anul 2009, în etapa prespital. Metoda de lucru a fost studiul populațional transversal privind evaluarea tipului de incident, a unor factori de risc și a condițiilor favorizante. Lotul de pacienți prespital a totalizat 395 de pacienți: 31,4% femei și 68,6% bărbați; cu vârsta de la 2 ani, până la 90 de ani, și o medie de vârstă de 36,34 +/- 17,78 ani. Rezultatele sunt prezentate după tipul de incident, răspunsul unității de urgențe mobilă (timpul în care ajunge la caz, timpul de lucru la caz), evaluarea traumei la nivelul sistemului nervos central cu ajutorul scorului Glasgow, și evaluarea traumei globale cu ajutorul scorului RTS (Revised Trauma Score). Concluziile confirmă faptul că existența unor echipaje de acordare a primului ajutor și transport al victimelor de la scena incidentului la o unitate spitalicească, poate salva numeroase vieți, poate reduce incidența dizabilităților pe termen scurt și poate îmbunătăți rezultatele pe termen lung.

Cuvinte cheie: incidente, medicină de urgență, prevenție

ABSTRACT

Accidental injuries represent a major cause for disabilities and premature death world wide. We present epidemiological data regarding cases resulted from different events, which were cared for by the medical staff from a SMURD unit in Timis County, in the year 2009, during pre-hospital stage. The method was the population transversal survey concerning the evaluation of the type of event, of the risk factors and the favorable conditions. The pre-hospital sample of patients was composed of 395 patients: 31.4% women and 68.6% men; the age for this sample was between 2 years and 90 years, and the medium age was 36.34 +/- 17.78 years. The results are presented related to the type of event, the answer of the mobile emergency unit (the time to reach the case, the time to attend the case), the evaluation of trauma at central nervous system level by means of Glasgow score, and the evaluation of global trauma by means of RTS score (Revised Trauma Score). The conclusions confirm the fact that the existence of firs aid crews and transportation of the victims from the scene of the

event to the hospital, may save many lives, may reduce the incidence of short term disabilities and may enhance the long term results.

Keywords: events, emergency medicine, prevention

INTRODUCTION

Accidental injuries are a major cause for disabilities and premature death worldwide. In the year 2000, a group of experts participating in a World Health Organization meeting in Geneva [1], agreed about the worldwide necessity for the improvement of the quality and the availability of the pre-hospital medical care system in the case of trauma.

Each year, approximately 5 million people die because of injuries [2]. In 2002, the injuries due to traffic accidents, selfaggression, hetero-aggression, fires and drowning were among the first 15 causes of death in persons with the age between 5 and 44 years old [3]. Except the millions of people dieing each year because of injuries, other millions of people sustain temporary disabilities, permanent and the or predictions indicate an increase of the number of these people in the next years [4, 5].

Many fatal injuries may be prevented or their severity may be reduced by adequate pre-hospital care [6]. The majority of benefits resulting from the medical care in the pre-hospital stage surface in the second faze of the trauma, when the adequate medical care may limit or stop the cascade of events, that otherwise would precipitate the death or would lead to important disabilities. Without the pre-hospital stage care, many individuals which might survive, may die on the spot of the accident or on the way to a hospital unit [7]. The majority of deaths happening during the first hours after the events are the result of compromising the respiratory ducts permeability, respiratory failure uncontrolled or hemorrhage. All these disorders can be treated by basic first aid measures. Medical care maneuvers in the pre-hospital stage may prevent the late deaths due to trauma [8]. The useful measures for the prevention of deaths in this stage include the adequate treatment for injuries and burns, the adequate immobilization of fractures, sustaining the oxygenation and the blood pressure in the first hours after the traumatizing accident, but also different measures which may reduce the incidence of later complications.

The present study offers epidemiological data regarding cases receiving medical care from the medical staff in a SMURD unit from Timis County, in the year 2009, during pre-hospital stage.

METHOD

The method was the population transversal survey regarding the evaluation of the type of event, of some risk factors and of the favorable conditions. For trauma cases the following data were used: the type of event, risk factors and favorable conditions, the response of the mobile unit (the time to reach the case, the time to attend the case), evaluating the trauma at central nervous system level by means of Glasgow score and evaluating the global trauma by means of RTS score (Revised Trauma Score).

Data were electronically filed using Microsoft Excel Program, 2001 and were processed using PASW 18 Program (the former SPSS), 2010. The values of the statistical significance threshold p < 0.05 were considered statistically significant, and p < 0.01 was considered very statistically significant. The following statistical tests were applied: chi-square test, Mann-Whitney test and Kendall correlations.

The pre-hospital sample of patients was composed of 395 patients: 31.4% women and 68.6% men; their age was between 2 and 90 years old and the medium age was 36.34 + 17.78 years, indicating a dispersed

structure of the sample. Based on the classification on age groups, the adult group with age between 19 and 55 years old is the largest, 74.4% (294), followed by the elderly group with the age over 56 years, representing 15.4% (61). The children and adolescents with the age between 6 and 18 years old represent 8.6% (34), and the children under 5 years of age, 1.5% (6).

RESULTS AND DISCUSSIONS

1. The type of event

Based on the type of event, 78% (301) cases were car accidents, 8.8% (34) cases were household accidents, 4.4% (17) cases were aggression cases (Figure 1).



Figure 1. The cases' distribution based on the type of event

2. The time of call

Based on the time of call, almost half of all the events, 40.5% (160) were reported in the afternoon, in the 1 pm – 6 pm interval. In the 7 pm - 12 pm time interval, 33.4% (132)

of all the events were announced, in the 7 am - 12 am time interval, 19.5% (77) of all the events were reported, and in the 1 am - 6 am interval, 6.6% (26) of all the events were reported (Figure 2).





3. Traveling to the event time

interval, with a medium of 7.9 minutes (Figure 3).

The traveling time for the unit to the place of the event is in the 1 minute -29 minutes



Figure 3. The cases' distribution based on the traveling time to the event

4. The intervention time in the place of the event

The duration of the intervention varies between a minimum of 5 minutes and a maximum of 90 minutes, with a medium of 20 minutes for intervention (Figure 4).



Figure 4. The cases' distribution based on the duration of the intervention

5. Glasgow Score (GCS)

The Glasgow Score (GCS) is used to describe the central nervous system lesions, and may have categorical values between 3 and 15, the score 3 being considered the most severe, and the score 15 being considered normal. It is composed of 3 parameters: the eyes reaction, the verbal reaction and the motor reaction [9]. The

GCS score with values over 13 is correlated with minor/absent cerebral lesions; the score between 9 and 12 indicates moderate cerebral lesions and the score under 8 indicate severe cerebral lesions [10].

For the analyzed sample, the Glasgow Score was between 3 and 15, and the medium value was 14.15 +/- 2.8, resulting that the severe accidents were present only in a small number of cases (Figure 5).



Figure 5. The cases' distribution based on the GCS Score values

Based on the GCS score classification, we have 6.6% (26) cases with severe cerebral damage, 1% (4) cases with medium cerebral

damage and 92.4% (365) cases with mild cerebral damage (Figure 6).



Figure 6. The cases' distribution based on the GCS classification

6. The RTS Score

The RTS Score calculation is based on GCS Score, systolic blood pressure and heart rate. This score is used to evaluate the severity of trauma, by primary evaluation (the ABC rule) and by advanced evaluation (on apparatus and systems) [11].

The RTS Score is the best and the most frequently used system for classification of

trauma, used for sorting the cases. A study from Holland [12], showed that, although the risk for severe lesions increases with the decrease of RTS, there is a large proportion of patients that must be hospitalized and treated in the traumatology wards, though their RTS is high, meaning a reduced sensibility of the score.

In the studied sample the medium RTS Score was 11.28 +/- 2.46 (Figure 7).



Figure 7. The cases' distribution based on the RTS Score

Based on the RTS classification, 5.6% of cases (22) have very severe trauma, 0.8% (3) have severe trauma, 2.5% (10) have

moderate trauma and 91.1% (360) have mild trauma (Figure 8).



Figure 8. The cases' distribution based on the RTS classification

No statistically significant differences were found between the medium values for GCS and RTS scores based on the hour when the intervention took place, p > 0.05.

There are no statistically significant correlations between the unit's traveling time to the place where the event took place and the GCS score of the accident victim, p > 0.05.

A statistically significant and negative correlation was found between the traveling time of the unit to the place of the accident and the RTS Score of the victim of the accident, r = -0.145, r2 = 0.021, meaning a small effect.

A statistically significant and negative correlation was found between the intervention time of the unit to the place of the accident and the GCS Score of the victim of the accident, r = -0.401, r2 = 0.161, meaning a medium size effect. The increased duration of the intervention is a negative prognostic factor, because of the reduction of the RTS Score.

A statistically significant and negative correlation was found between the intervention time and the RTS Score of the victim of the accident, r = -0.422, r2 = 0.178, meaning a medium size effect. The increased duration of the intervention is a negative prognostic factor, because of the reduction of the RTS Score.

CONCLUSIONS

Most of the times, the existence of units for the first aid and the transport from the scene of the event to a hospital, may save many lives, may reduce the incidence of shortterm disabilities and may improve the longterm results [13, 14].

The majority of strategies already in use for the prevention of accidental injuries are based on primary prevention – avoiding events or reducing their effects, or on secondary prevention – giving an adequate medical response in order to reduce the effects of the trauma incident.

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Correspondence to: Fabian *Received for publication: 06.10.2010, Revised: 25.10.2010*

ASPECTS REGARDING MORBIDITY DUE TO FOOD POISONING DURING THE LAST DECADE IN SIBIU COUNTY

Resiga E., Mihaila R.

Center for Public Health Sibiu

REZUMAT

Intoxicațiile alimentare reprezintă o problemă majoră de sănătate publică în județul Sibiu, apărând mai ales în zonele urbane (58%), afectând în special populația adultă (62,91%) și apar datorită consumului de produse de origine animală (75%) contaminate cu grupul Salmonella D, iar decese nu s-au raportat. Majoritatea incidentelor de intoxicație alimentară sunt legate de familie (88%) și sunt cauzate de alimente pregătite în gospodăriile particulare, unde normele de igienă fie nu sunt cunoscute, fie nu sunt respectate. Prevenirea izbucnirilor epidemice de intoxicații alimentarea ar trebui să prevină toți factorii de risc prin respectarea normelor de igienă în toate magazinele care comercializează alimente și în gospodăriile particulare.

Cuvinte cheie: intoxicații alimentare, agenți patogeni, profilaxie

ABSTRACT

Food poisoning represents a major public health problem in Sibiu County, occurring especially in urban areas (58 %), especially affecting adult population (62.91%) and are caused by the consumption of foods of animal origin (75%) contaminated with Salmonella group D and no case of death has been reported. The majority of food poisoning incidents is family-related (88%) and is caused by meals cooked in personal homes, where hygiene norms are not known and are not respected. The prevention of food poisoning outbreaks should prevent all risk factors by respecting hygiene norms in all food shops as well as at home. **Keywords**: food poisoning cases, pathogenic agents, prophylaxis

INTRODUCTION

Due to a high morbidity rate both nationally and regionally, food poisoning represents a major public health problem, affecting a large number of consumers of the same product and having socio-economic implications, despite its benign prognosis, imposing permanent and important prevention measures in order to protect the population [1, 2]. Although recently important progress has been made regarding the improvement of hygiene conditions, the sanitary knowledge of the population, the reduction of the means of bacteria growth (efficient heat treatment, refrigeration, new methods of storage), at a world level a slight decrease of food poisoning cases can be noticed [1-6].

THE SCOPE OF THE PAPER

The research follows the evolution of morbidity caused by food poisoning with the purpose of establishing the hygienic – sanitary links in the epidemiological chain of these cases' cause of illness and the taking of the most efficient prevention measures and strategies.

MATERIAL AND METHODS

The study is based on a descriptive analysis of morbidity caused by food poisoning in the last decade (2000-2009) in Sibiu County, medically treated cases at the County Clinical Emergency Hospital – The Infectious Disease Unit and the corresponding municipal and town hospitals in Sibiu County. The data for the illnesses cases have been provided by the Surveillance and Control Services of Contagious Diseases and Food Hygiene, the Sanitary Chemistry Laboratory and the Bacteriology Laboratory pertaining to the Center for Public Health of Sibiu County.

RESULTS AND DISCUSSIONS

During the last decade (2000-2009) in Sibiu County a number of 73 food poisoning outbreaks have been recorded, of which the majority (about 88%) are family outbreaks, due to the inappropriate cooking and storage conditions of foods in some homes (Table 1).

	Collective	outbreaks	Family outbreaks		TOTAL	
	No. of	No. of	No. of	No. of	No. of	No. of
Year	outbreaks	cases	outbreaks	cases	outbreaks	cases
2000	-	-	5	13	5	13
2001	-	-	6	28	6	23
2002	-	-	10	48	10	48
2003	-	-	27	81	27	81
2004	2	67	6	19	8	86
2005	1	101	4	11	5	112
2006	2	74	2	21	4	95
2007	-	-	2	8	2	8
2008	3	13	-	-	3	13
2009	-	-	3	36	3	36
TOTAL	8	255	65	260	73	515

Table 1. The distribution of food poisoning cases on outbreaks

Regarding the analysis of the distribution of illnesses cases due to food poisoning on provenience areas, it has been noticed that there is a slight predominance of these cases in urban areas (58%), a paradoxical situation, taking into consideration the fact that in rural areas the hygiene conditions both in family and food shops environment are obviously more deficient as compared to urban areas (Table 2).

YEAR		Total o	of cases	
	Urban		Rural	
	Cases	% of the total	Cases	% of the total
2000	13	100	-	-
2001	19	82.61	4	17.39
2002	31	64.58	17	35.41
2003	59	72.84	22	27.16
2004	86	100	-	-
2005	9	8.03	103	91.97
2006	40	42.11	55	57.89
2007	4	50	4	50
2008	4	30.77	9	69.23
2009	28	82.36	8	17.64
TOTAL	293	58	222	42

 Table 2. The distribution of food poisoning cases on source areas

During the studied period it has been emphasized the fact that of the total of 73 outbreaks comprising 515 cases. the illnesses that occurred family in environment (262) were predominant, representing 51.88%, then at weddings and

baptizing, 188 cases were recorded, that is 37.22%, and from food units (processing laboratories) and public food units (restaurants) only 10% of the total cases occurred (Table 3).

Table 3. The repartition of food poisoning cases on collectivities

Collectivity	Number of cases	% of the total
Weddings	188	37.22
Restaurants	20	3.96
Processing Laboratories	35	6.93
Family	262	51.88
TOTAL	515	100

The monthly repartition of food poisoning cases shows a high rate during warm seasons, the months belonging to the second and third semester of the year, thus indicating the importance of the climatic factor, of temperature and humidity that both favors the growth of pathogenic microorganisms. The months of the year with the most outbreaks were the summer months, 61 outbreaks from the total of 73 recorded, up against the cold months, when only 5 outbreaks of food poisoning were recorded (Table 4).

TRIMESTER	MONTH	OUTBREAKS	% OF THE TOTAL
Ι	January	-	-
	February	-	-
	March	2	2.73
II	April	3	4.1
	May	2	2.73
	June	14	19.17
III	July	22	30.13
	August	25	34.24
	September	-	-
IV	October	4	5.47
	November	1	1.36
	December	-	-
TOTAL	12	73	100

Table 4. The repartition	of food poisoni	ing cases on cale	ndar months
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The highest share in what it regards the morbidity due to food poisoning is represented by the 20 years old age group, in such a way that from the total of 515 researched cases, 324 cases were recorded at adult age, representing almost 63%, while 191 cases were recorded in children, representing 37% (Table 5).

Table 5. The repartition of food poisoning cases depending on age

YEAR	NO. OF	ADULTS	% OF	CHILDREN	% OF
	CASES		ADULTS		CHILDREN
2000	13	10	76.92	3	23.07
2001	23	16	69.56	7	30.43
2002	48	35	72.91	13	27.09
2003	81	54	66.66	27	33.33
2004	86	33	8.37	53	61.62
2005	112	67	59.82	45	40.18
2006	95	64	67.37	31	32.63
2007	8	4	50	4	50
2008	13	6	46.15	7	53.84
2009	36	35	97.22	1	2.78
TOTAL	515	324	62.91	191	37.09

It has been noticed that for 42 outbreaks out of the 73 recorded during this period, the most common etiological agent was Salmonella, as follows:

- Salmonella group D =29 outbreaks
- Salmonella group C = 4 outbreaks
- Salmonella group B = 5 outbreaks
- Salmonella group A = 4 outbreaks

In the food poisoning cases that have appeared during 2000-2009, other

pathogenic agents were traced out: Staphylococcus, Proteus mirabilis, Escherichia Coli.

The statistical data have shown that the pathogenic agents were isolated from the coproculture of the patients in 32 outbreaks. From the foods the isolation was made for 18 outbreaks and in 9 outbreaks they were identified both from the patients and from

the foods. In 12 outbreaks no pathogenic agent could be isolated (Table 6).

Isolated pathogenic agents	Final numbers	
From the patients	32	
From foods	18	
The patients and the foods	9	
They were not isolated	12	

Table 6. The isolation of the pathogenic agents

The research concerning the source of infection for the studied food borne diseases during 2000-2009 indicated that it was mainly animal (75%), owing to the use in

food industry of animal origin products from personal homesteads, their cooking and storage being often inappropriate (Table 7).

Table 7. The source of infection of food poisoning cases

The source of infection	Absolute numbers	%	
Human	6	8.21	
Animal	55	75.34	
Unknown	12	16.43	
TOTAL	73	100	

The study of the forms of disease was:

- Mild cases in 70% of cases
- Medium cases in 25% of cases
- Severe cases in 5%

It should be emphasized the fact that neither in the last decade nor in the last quarter of the century there has been no case of death reported due to food poisoning in Sibiu County.

CONCLUSIONS

1) Food poisoning cases have been reported every year, but during the last years a decrease tendency has been noticed, regarding the aspect of the extension and the gravity of the disease.

2) The majority of food poisoning outbreaks is family-related and is due to the meals organized in personal homes, where there are no appropriate conditions, especially

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3) The most frequent etiological agent implicated in the outbreak of food borne diseases is Salmonella D, mostly highlighted in products of animal origin, coming from the family environment.

4) The calendar repartition of the cases of food poisoning indicates their seasonal nature; during summer there is a higher frequency, in July –August when the heat factor influences the multiplication of pathogenic bacteria.

5) The repartition according to age and age groups shows incidents both in adults and children, but with preponderance in adulthood.

6) When cases of food poisoning appeared, breaches of the hygiene norms were identified, which were sanctioned according to the legislation in force.

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Correspondence to:

Elena Resiga Phone: 0745301858 Email: ileanaresiga@yahoo.com *Received for publication: 16.09.2010, Revised: 15.10.2010*

DIET HABITS IN A GROUP OF PREGNANT WOMEN FROM MURES COUNTY

Moldovan G., Tarcea M., Nădăşan V., Ureche R.

University of Medicine and Pharmacy Targu-Mures, Department of Hygiene

REZUMAT

Obiective. Estimarea principalelor caracteristici privind dieta și atitudinea față de nutriția din timpul sarcinii la un grup de femei din județul Mureș. **Metodologie.** Acest studiu epidemiologic retrospectiv s-a bazat pe completarea individuală a unui chestionar cu 70 de întrebări, de către 178 de femei cu copii sub 6 luni, atât din mediul urban cât și rural, atunci când s-au prezentat la medicul de familie pentru consult după naștere. **Rezultate.** Au fost diferențe notabile între mediul de rezidență și comportamentul alimentar al gravidei, al stilului său de viață, a suplimentelor alimentare luate și a atitudinii acestora față de alimentație în graviditate. Cele mai multe femei au consumat în timpul sarcinii mai multe vegetale, mai multe proteine animale și lipide, mai multe băuturi. Doar o mică parte au primit recomandări privind suplimentarea cu acid folic, fier sau iod, din timpul sarcinii. **Concluzie.** Se impune un program educațional mai eficient pentru femei, atât înainte cât și în timpul sarcinii, pentru a evita factorii de risc pentru sănătatea mamei și a copilului.

Cuvinte cheie: nutriție, graviditate, comportament alimentar, prevenție

ABSTRACT

Objectives. To evaluate characteristics of diet habits during pregnancy in a group of women from Mures county. **Methods.** This epidemiological retrospective study was carried out in 2009 by filling in a questionnaire from 178 women with newborn babies, both from urban and rural areas of Mures County, when they came to general practitioner for usual check-up after birth. **Results.** We registered some differences between urban and rural areas related to knowledge about proper nutrition, life style, avoiding risk factors during pregnancy, food supplements intake, attitudes and nutrition behaviors and nutritional status. Most women in our group have said that during pregnancy they have taken more vegetables or fruits than usual (65%) and more animal proteins, also total lipids intake was higher in pregnancy and slightly decreased after delivery. Only a few received recommendations to take folic acid, iron or iodine during pregnancy. **Conclusion.** It is important to have a preventive educational program, in order to improve women health before or during pregnancy period, also regarding proper nutrition behavior and avoiding risk factors for mother and child.

Keywords: nutrition, pregnancy, nutrition behavior, prevention

INTRODUCTION

Maternal nutrition comprises anthropometric factors such as pre-pregnancy weight-for-height (body mass index-BMI) and gestational weight gain (which partly reflects the balance between energy intake and energy expenditure, but also includes increases in body water), as well as intake of protein and micronutrients (vitamins and minerals).

Increases in maternal anthropometric factors carry risks as well as benefits: more is not always better. For example, pre-pregnancy obesity is strongly associated with late fetal death (stillbirth) and excessive weight gain increases the risk of fetal macrosomia, cesarean section and maternal weight retention [1].

Many nutritionists, prenatal care providers and public policy-makers would counter that it is the quality of the diet, not its quantity, which is most important. Thus, it is argued, pregnant women who eat dense "junk food" may gain adequate (or even excessive) amounts of weight during pregnancy but are nevertheless at nutritional risk for adverse pregnancy outcomes. In women with adequate energy intake, however, protein is rarely if ever a limiting nutrient and highprotein diets may even be detrimental [2, 3].

Nutrition and life style characteristics play an important role and act in time, out of all the environmental factors that influence health status. A particular state of health is pregnancy, when it is necessary a balanced diet in order to assure a proper health status for pregnant women, the growth needs of fetus, the physical strength and vitality during labor and success of lactation period. In this particular period of time, it's important not only the quantity but the quality and variety of foods [4, 5, 6].

METHODS

Our aim was to evaluate the characteristics of diet habits during pregnancy in a group of 178 women from Mures County.

This epidemiological retrospective study was carried out in 2009 by filling in a questionnaire by 178 women with newborn babies, both from urban and rural areas, when they came to general practitioner for usual check-up after birth. Participants gave their informed consent. Each questionnaire was composed of 70 questions, distributed and completed in similar circumstances.

Subjects were asked about nutrition behavior and attitudes toward diet and behavior risk factors during the period of pregnancy. The program EpiInfo 6.0. has been used in processing and analysis of the data. Statistical tests used to determine the statistical significance were Chi square test with Yates correction and also Student test.

RESULTS AND DISCUSSIONS

Of 178 healthy women, 105 (59%) were from urban and 73 (41%) from rural areas.

From a group of women aged between 17 and 39 years, the average age in urban areas was 28.76 years (median 28 years) and in rural population was lower, 26.49 years (median of 27 years).

In our group, most of the women have graduated high school, both in the urban (36.19%) and in rural areas (38.35%), and also we have the same percentage recorded for those who graduated primary school or university (25.28%).

In order to measure socio-economic level in our group, we have taken into consideration the income of less than 500 lei (for low income), the middle category and the high income for over 5000 lei per month. In urban areas 61.9% of women have incomes between 600-1000 lei, with 24.76% under 500 and only 13.33% of women receive more than 5000 monthly (high income) and in rural areas most people have

incomes between 600-1000 (57.53%), but the percentage of low income is 42.46%, and no person has earnings on high income category (Table 1).

	Origin		Total
Characteristics	Urban	Rural	n-178
	n=105	n=73	11-178
Age (years)			
<25	12 (11.42%)	20 (27.4%)	32 (18%)
25-30	64 (61%)	43 (58.9%)	107 (60.11%)
>30	29 (27.62%)	10 (13.69%)	39 (22%)
Education			
- primary school	16 (15.23%)	30 (41%)	46 (25.84%)
- middle school	15 (14.28%)	6 (8,21%)	21 (11.8%)
- high school	38 (36.19%)	28 (38.35%)	66 (37%)
- university	36 (34.28%)	9 (12.32%)	45 (25.28%)
Income			
- low income	26 (24.76%)	31 (42.46%)	57 (32%)
- middle income	65 (61.9%)	42 (57.53%)	107 (60.11%)
- high income	14 (13.33%)	-	14 (7.86%)
Physical activity			
- active	41 (39%)	57 (78%)	98 (55%)
- sedentary	64 (61%)	16 (22%)	80 (45%)
Breastfeeding	95 (90.47%)	67 (91.78%)	162 (91%)

Table 1. Demographic characteristics of subjects

When asked how do the total income influence life style and daily needs in the family, 45.71% of urban women and 34.24% from rural areas ones said that the income sustain the family only to get a decent living, but they cant afford buying expensive food or other items needed.

In our group the BMI shows that 17.9% were obese, with a higher percentage in

urban areas (20.0% to 15.0%) probably related to lack of activity and stress more common in populated cities [7].

All subjects were asked about the frequency of food consumption during pregnancy and attitudes toward nutrition in this particular period of time.

From our data, we found that 43.8% of urban women reported that milk and milk products (yogurt, cheese) have an important percent into the daily diet before birth, 35.23% consumed these products only 2-3 times per week, the rest entering them into the diet once or twice a month or even not at all. In rural areas, the percentage of women who have used in their menu every day milk and milk products was somewhat higher (54.79%), 27.39% consuming 2-3 per week, 5.47% 1-2 times per month and the rest have not used the milk in the diet during pregnancy (Figure 1).

Meat products (sausages, salami) or canned, have been frequently used in the food by over 50% of women during pregnancy in the cities, practically no woman has avoided the consumption of such products. In rural areas the situation stands a bit different, 53.42% had consumed meat 2-3 times per day, women share the rest between daily consumption of these products or lack of food (Figure 1). The quantity of total proteins as well as the proportion of energy intake rose during pregnancy and postpartum [8].

Most women in our group have said that during pregnancy they have taken more vegetables or fruits than usual (65%), also total lipids intake was higher in pregnancy and slightly decreased after delivery, especially animal lipids rose during pregnancy. It was an extremely low number of people who do not have enough fatty foods during pregnancy (8.42%), women with low income [5, 7].

The carbohydrates had the highest values late in pregnancy. Regarding the consumption of sweets during pregnancy, in urban areas about one third said they had consumed such foods daily or 2-3 times per week, and the rest avoided them in this particular period of time. In rural areas most people have taken sweets 2-3 times per week (50.68%) and 30.13% daily (Figure 1).



Figure 1. Frequency of main foods used during pregnancy in our group

The intake of dairy products, fruits, sweets and animal lipids have increased during pregnancy and the intake of eggs and dry vegetables gradually decreased. Intakes of potatoes, cereal products and vegetal lipids have remained approximately constant. Fish consumption, an important food for pregnant women due to omega-3 fatty acids content, was very low almost in all women. The quantity of consumed bread was higher in the second half of pregnancy compared to usual menu and it was under recommended quantity. In addition, the quantities of total/animal proteins and lipids, and carbohydrates were higher in mothers with a higher education (p=0.008), while women with elementary education and low incomes consumed more potatoes, vegetal lipids and alcoholic beverages. High educational level and good income were associated with high intake of proteins (meat, dairy and eggs), animal lipids, fruits and sweets [2, 4, 9]. 26% of the women had a diet lacking at least one of the food groups.

When we asked what kind of beverages they have used during pregnancy, most of the women from cities reported that they used the natural juice drink (35.23%), tea (21.9%) and mineral water (5.71%). In rural areas, most drinks consumed were tea (26.02%) and mineral water (24.65%). The regular consumption of juices, coffee or cola was similar in all areas (between 9-15%). Many of them have had coffee during pregnancy, exceeding 60% in most cases to a cup a day (Figure 1).

When we asked them to choose what they appreciated most at food, 33.33% of women in the city selected freely the quality of food, 30.47% the freshness, 28.57% chose the taste, smell and color, for other criteria such as packaging 9.52%, also desire to eat healthy or advertising (0.95%). In rural women also appreciate areas quality (31.5%) and freshness (20.54%) and affordable price was an important criterion (15.06%) as opposed to urban areas, where only 9,52% of people was interested in this factor.

The iodine deficiency in pregnant women stayed within the limits of a mild deficiency in our country, and it was greater in the rural area as against the urban area. The differences between the urban and rural areas can be accounted for by the choice of the type of the salt used in food preparation, the improper conditions of transportation and storage in the rural shop, the high consumption of non-iodized salt by the rural population (salt bought directly from the salt mines or not intended for human consumption), a fact related to education, mindset and resistance to novelty [6, 10].

The iron deficiency anemia in pregnant women continues to have a very high prevalence in our country, with significant differences by area of residence, the worst situation having been registered in the rural area. More than half of the women underwent prophylactic treatment with iron and multivitamins, yet the length of the treatment was not recorded, while less than 30% of pregnant women took folic acid. Like other authors, the more educated the mother is, the higher the median values of hemoglobin are, while the prevalence of anemia decreases: 66% of the children whose mothers have less than 5 educational grades are anemic [10].

Regarding breastfeeding: 92.2% of the surveyed children were breastfed for varying period of time (one to six months) and only 7.7% of them were never breastfed, what ranks Romania among the countries with a good indicator, registering even a slight increase as compared to 1991 [7, 10]. Similar, in our group only 9% of children were not breastfed (Table I).

The main sources of information for pregnant women during pregnancy were: the family doctor (73%), the nurse assisting the family doctor (50.7%), relatives (18%) and the obstetrician (11.1%). This order is the same by the areas of residence. Most of the women who went for prenatal consultations (64%) said that during these visits they received no recommendation about iodized salt, folic acid or nutrition.

CONCLUSIONS

It is important to develop a network of community health nurses that could contribute for a better surveillance of pregnant women throughout the country, a faster identification of vulnerable families with low incomes, the easier access to such

families to the health care and social services they need, based on better health education programs.

Our survey data draws attention to some aspects that need to be taken into account

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Correspondence to:

Geanina Moldovan Address: Department of Hygiene, University of Medicine and Pharmacy Targu-Mures; 38 Gh. Marinescu street, 540139 Targu-Mures; Email: geanina78moldovan@yahoo.com or monaumf2001@yahoo.com Phone: 0727727042 *Received for publication: 10.09.2010, Revised: 25.10.2010*

GENERAL PREVALENCE OF ACUTE DISEASE AT ANTE PRE-SCHOOL, PRE-SCHOOL AND SCHOOL CHILDREN IN THE 2006-2009 TIME PERIOD, IN BIHOR COUNTY

Oros C.

University of Oradea, Faculty of Medicine Bihor Public Health Department

REZUMAT

Triajul epidemiologic se efectuează cu scopul depistării și izolării precoce, înainte de intrarea în colectivitate, a suspecților și bolnavilor de boli infecțioase. În creșe și grădinițe, triajul se realizează zilnic; în școli, la prezentarea elevilor după fiecare vacanță și ori de câte ori este nevoie. Numărul de copii și adolescenți participanți la triajul epidemiologic a fost dependent de numărul celor înscriși în unitățile de învățământ. Procentul de participare la triaj s-a situat între 88,8-94,2% dintre copiii și adolescențiiî nscriși. Pentru cazurile de boli acute diagnosticate în colectivitățile de antepreșcolari, preșcolari și școlari participanți la triajul epidemiologic, s-a calculat prevalența generală și prevalența specifică pe categorii de afecțiuni, pe cicluri de învățământ, ani de studiu și pe mediul urban/rural. Prevenirea și combaterea bolilor acute infecto-contagioase diagnosticate la triajul epidemiologic constă în: depistarea, izolarea și tratarea surselor de infecție; reducerea răspândirii bolilor; creșterea rezistenței nespecifice și specifice a copiilor și adolescenților.

Cuvinte cheie: copii și adolescenți, triaj epidemiologic, prevenție

ABSTRACT

The epidemiologic triage is carried out with the purposes of early detection and isolation, of patients with infectious diseases and suspects before entering the community. In nurseries and kindergartens, triage is done daily, in schools, after pupils return from holidays, whenever necessary. The number of children and adolescents participating in the epidemiologic triage was dependent on the number of those enrolled in schools. Percentage of participation ranged from 88.8 to 94.2% among enrolled children and adolescents. For diagnosed acute disease cases among ante preschool, preschool and school children participanting in the epidemiologic triage it was calculated an overall and specific prevalence on category diseases, on educational levels, years of study and the urban / rural environment. Preventing and combating of infectious and contagious acute diseases diagnosed by the epidemiologic triage consists of: detection, isolation and treatment of sources of infection, reducing the spread of diseases, increase of specific and non-specific resistance of children and adolescents.

Keywords: children and adolescents, epidemiologic triage, prevention

INTRODUCTION

Morbidity differences in different periods of growth and development are due to somaticphysiological and psychological peculiarities of these stages, plus specific living stages of development.

At pre-school age, there is high frequency of infectious and contagious diseases due to increased susceptibility of the organism, but also to the unavoidable contact with other sick children and adults or carriers of germs.

Other diseases that occur with greater frequency in the pre-school age group are upper respiratory inflammation, allergies, skin diseases of different etiologies, nodal disease, rheumatic disease with cardiac involvement, accidents (traffic accidents, drowning, burns).

The little school age is characterized by a relatively high rate of communicable diseases, inflammation of the respiratory, adenoids, increase in injuries and traffic accidents, height and weight growth disorders.

During the middle school age, the most frequent morbid disorders are streptococcal infections, dental caries, tonsillitis, rheumatic disease, myopia, deformations of the spine, trauma and accidents.

The incidence during puberty and adolescence is dominated by endocrine and nervous disorders, heart diseases, myopia, dental caries, deformations of the spine.

The frequency of diseases in children is influenced by their concentration in the community, the season when the education and training take place, and body responsiveness.

General issues concerning the specific character of the diseases related to the development stage are relative, because in the same age group differences may occur, which is explained by the fact that the disease is a product of living conditions, including socio-economic ones, varying from community to community, from one school to another [1-4].

The most commonly diagnosed diseases are acute non-streptococcal angina, lice and mycoses [5-14].

METHODOLOGY

Material. The number of children and adolescents participating in epidemiologic triage was dependent on the number of those enrolled in schools.

In 2006-2007 time period, the percentage of children and adolescents compared to those enrolled review was:

- September 2006, 91.6% (86784 to 94718)
- January 2007, 91.5% (85021 to 92856)
- April 2007, 92.6% (79031 to 85324).

In 2007-2008 time period, the percentage of children and adolescents compared to those enrolled review was:

- September 2007, 92.8% (79840 to85995)
- January 2008, 91.6% (86784 to 94718)
- April 2008, 92.9% (65899 to 70905).

In 2008-2009 time period, the percentage of children and adolescents compared to those enrolled review was:

- September 2008, 94.2% (72928 to 77353)
- January 2009, 88.6% (79807 to 90042)
- April 2009, 93.1% (101932 to 109432).

Method. Epidemiological survey is an active supervision method of health related practices in children and adolescents communities. It aims the early detection and isolation, before entering the community, of the suspects and patients with infectious diseases. In nurseries and kindergartens a daily survey has to be carried on. In schools of all types, epidemiological survey is

performed at the pupils' presentation, after every holiday and whenever needed.

RESULTS AND DISCUSSIONS

For cases of acute illness, diagnosed in ante pre-school, pre-school and school communities, participation in epidemiologic survey was calculated overall prevalence and specific prevalence on categories of diseases, on educational levels, years of study, 2006-2007, 2007-2008 and 2008-2009, and urban/rural environment.

1. Overall prevalence of acute diseases, by years

Overall prevalence (%) for acute illnesses, diagnosed during the epidemiologic survey, was between 1.3% in September 2007 and 2.4% in September 2008 (Figure 1).



2. Overall prevalence of acute diseases, by years and by residence

Overall prevalence (%) for acute illnesses in urban environment was between 1.4% in September 2007 and 2.9% in January 2007 (Figure 2).

Overall prevalence (%) for acute illnesses in rural environment was between 0.9% in April 2008 and 2.3% in September 2006 (Figure 3).





3. Overall prevalence of acute illnesses by educational levels in the 2006-2007 time period

For the school year 2006-2007, the overall prevalence of elevated values for acute illnesses was calculated for the nursery:

11.4% in September 2006, 18.9% and 10.5% in January 2007 and April 2007. Following are the kindergartens with the overall prevalence of 4% - 4.3% - 5.1% and, on the third place, schools with a prevalence of 2.2% - 2% - 1.5% (Figure 4).



In September 2006, the highest prevalence rates were calculated in urban nurseries, 11.4%, and kindergartens, 6.3%, both higher than rural areas. In rural areas, the highest prevalence was found in schools, 2.5%, higher than in the urban environment, and in kindergarten, 1.9% (Figure 5). In January

2007, in the urban areas the overall prevalence rates were always higher than in the rural areas, for all educational levels. In the urban areas, the overall prevalence was higher in the nurseries, 18.9% and in the kindergarten.





In April 2007, in the urban areas the overall prevalence rates were higher than those in the rural areas in all cycles. In the urban areas, the overall prevalence was higher in the nurseries, 10.5%, in the kindergartens, 9.2%. In the rural areas, the overall prevalence was higher in primary schools, 1.3% and in kindergartens, 1.3% (Figure 7).



4. Overall prevalence of acute illness, by educational levels in 2007-2008

In all educational levels, in the 2007-2008 school year, the overall prevalence of elevated values for acute illnesses were calculated for the nurseries: 11.2% in September 2007, 11.0% in January 2008 and 11.8% April 2008. Next there were the orphanages with the overall prevalence of 5.7% - 0% - 10.1%, and the kindergartens' children with the overall prevalence of 1.9%

- 4% - 3.7%. The shelters were sometimes calculated high prevalence, but the number of children is very low (Figure 8).

In September 2007, the highest prevalence rates were calculated in urban nurseries, 11.2%, and kindergartens, 2.3%, both higher than in the rural ones.

In rural areas, prevalence was highest in site centers, 7.1% and in kindergartens, 1.5% (Figure 9).





In January 2008, in the urban areas, the overall prevalence was higher in the nurseries, 11.0% and in the kindergartens, 6.3% up against those in the rural areas. In the rural areas, the overall prevalence was higher in primary schools, 2.5% and in kindergartens, 1.9% (Figure 10).

In April 2008, in the urban areas, the overall prevalence was higher in shelters, 26.3%, and in nurseries, 11.8%. In the rural areas, the overall prevalence was higher in orphanages, 6.7%, and vocational schools, 1.9% (Figure 11).



5. Overall prevalence of acute illnesses in the 2008-2009 educational cycle

For all the educational levels in the 2008-2009 school year, the overall prevalence of elevated values for acute illnesses were calculated for the nurseries: 25.6% in September 2008, 18.0% in January 2009 and 16.1% in April 2009. Next there were the orphanages, with the overall prevalence of 6.6% - 3.3% - 4.4%, and the kindergarten children, with the overall prevalence of 4.0% - 4.5% - 2.9%. The shelters presented sometimes high prevalence, but the number of children is very low (Figure 12).

In September 2008, the highest prevalence rates were calculated in urban nurseries, 25.6%, and kindergartens, 6.1%, both higher than those in the rural ones.

In the rural areas, prevalence was highest in vocational schools, 8.3%, and the centers location, 6.8%, both higher than those in the urban areas (Figure 13).

In January 2009, in the urban areas, the overall prevalence was higher in the nurseries, 18.0% and in the kindergartens, 7.8%, higher than in the rural areas. In the rural areas, the overall prevalence was higher in orphanages, 4.2% and in kindergartens, 2.0% (Figure 14).











In April 2009, in the urban areas, the overall prevalence was higher in the nurseries, 16.1%, and kindergartens, 4.4%, higher than for the ones in the rural areas. In the rural areas, the overall prevalence was higher in vocational schools, 7.9%, and orphanages, 4.4%, and in May increased to urban areas (Figure 15).

CONCLUSIONS

The prevention and the fight against acute infectious and contagious diseases diagnosed during epidemiological survey means:

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- Tracing sources of infection, isolation and treatment, preventing their entry into the community

- Reducing the spread of disease by making functional circuits in institutions for children, environmental remediation

- Increasing the nonspecific resistance of children and adolescents through optimal nutrition, body hardening by natural factors, the optimal organization of activity and rest program

- Increasing resistance by specific natural and artificial vaccines [1-4].

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Correspondence to: Oros

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CONSIDERATIONS ON THE EVOLUTION OF THE ATTITUDE TOWARDS BIRTH

Sas I.¹, Tuță-Sas I.¹

1. Clinical Hospital "Dr.D.Popescu" Timişoara

REZUMAT

Dificultățile care înconjoară nașterile moderne și care conduc la un număr în continuă creștere de operații cezariană pot fi, cel puțin parțial, explicate de evoluția planetei în general și de transformările ecologiei umane în special (schimbări ale densității populației, ale comportamentului alimentar, ale concepției despre reproducere etc.). Toate aceste schimbări au adus în pragul nașterii femei cu înălțime mai mică, cu indice de masă corporală mai mare și cu vârstă mai înaintată decât este ideal. Astfel, tehnologizarea concepției și nașterii a venit de la sine, ca răspuns la aceste transformări, și a început odată cu fertilizarea in vitro, maternitatea surogat, nașterea curentă prin cezariană și terapia intensivă neo-natală.

Cuvinte cheie: naștere modernă, cezariană, etica, travaliu

ABSTRACT

The difficulties surrounding the modern births and leading to an increasing number of cesarean surgeries may be, at least partially, explained by the evolution of the planet in general and especially by the human ecology transformations (changes in the population's density, changes of the alimentary behavior, changes of the way the reproduction is perceived, etc.). All these changes brought on the verge of giving birth women with lower height, with larger BMI and with more increased age than the ideal values. Thus, the use of technology for conception and birth came natural, as a response to these transformations, and started with in vitro fertilization, surrogate maternity, current cesarean birth and neo natal intensive care.

Keywords: modern birth, cesarean, ethics, labor

OBSTETRICS AND ETHICS

The obstetrics became a domain of terms, some derived from research, some derived from the clinical practice, but all having marked ethical connotations. Thus, *the holistic obstetrics* implies a complete pattern

of maternal care, able to address the needs of the patient as a "whole", and the practice of perinatal medicine implies the clinical and ethical concept of *fetus as patient*. The new scientific acquisitions regarding the fetal diagnosis and the perinatal management became unanimous accepted, encouraging the development of this concept.

Beyond multiple the religious, philosophical, moral or even political regarding controversies, assigning а personal and moral status to the human conception product, it is obvious from the perspective of the perinatal medicine principles, that he must be perceived as a patient.

Thus, the fetus becomes a patient when he is the subject of interventions trough medical techniques and maneuvers, either diagnostic or therapeutically, with the main purpose of identification, prevention or even the treatment of some elements that may have unfavorable interferences on the life quality of the fetus to be born. The notion of fetus as a patient is strongly correlated, from an ethical point of view, with the quality of life of the human conception product when he will be born, respectively when he will get a moral status and a personality.

Another important aspect of the concept regarding the fetus as a patient is the fetal viability. The limit of fetal viability, namely the moment when the fetus would be potentially capable of extra uterine life, is different based on the experience of the different schools, both in Europe and in the USA. In the USA this limit is set around the age of 24 weeks, and in Europe it varies between 24 and 28 weeks of gestation.

interventions, Intrauterine fetal with different therapeutic purposes, are still in a preponderantly experimental state even in centers with a very important experience in medicine. Really remarkable perinatal progress is especially present within the pre implantation prenatal diagnostic and methods. In case of pre implantation diagnosis, even if only about a screening of the embryos (resulted from the in vitro fertilization), the problem is if such scientific experiments don't overrun certain ethical limits. The technique represents an alternative for the prenatal diagnosis (chorionic villus sampling, amniocentesis, etc.), which can not be totally excluded because there is a possibility for a normal cell to be harvested, and the embryo to have other abnormal cells, and, for safety, the pre implantation diagnosis must be verified by the prenatal diagnosis (in the first or the second trimester of pregnancy).

In the context of the assisted reproductive techniques, when the possibility for multiple pregnancy is incomparable more important, the multifetal pregnancy reduction must be reminded, which technically means the chemical or mechanical elimination of an embryo. Fro an ethical point of view, the problem is very complex, resembling much with the bioethics of abortion.

The idea of implanting more embryos, resulting in multifetal gestation, with all its consequences and complications, is intensely disputed by many personalities in the domain of fetal and perinatal medicine.

The problem of implanting more embryos or harvesting more ovules than necessary, with the purpose of obtaining material incomes, represents a serious ethics, morality and judicial problem, which must be intensely combated in all its aspects.

ETHICAL REASONS IN PERINATAL MEDICINE

Within the framework of the 21 European Congress of Perinatal Medicine, carried on in Istanbul in September 2008, the rejoined comities of the European Association for Perinatal Medicine and the World Association for Perinatal Medicine adopted a declaration and a guide for the ethics of perinatal medicine practice.

General ethical considerations – medicine as art and science, needs as an essential element the correct and permanent communication between the physician and
the patient. Beyond cultural, national, social and legal differences, for the perinatal medical practice is very important to respect and permanently reevaluate the ethical codes. The bioethics, with philosophical dimensions, is an essential component of perinatal medicine and must provide answers to the questions *what is the right thing to do? or what we must do?* in certain clinical circumstances [1].

WOMAN'S RIGHT TO AUTONOMY

In a different approach, the woman's right to autonomy triggered a real conflict between the right of the patient to autonomy and the right to medical - surgical care, in accord with the autonomy, regarding performing the unaccepted medical techniques. There is an opinion that the competent woman is free to refuse the medical opinion and the treatment for logical or illogical arguments, even if as a consequence, the fetus will suffer lesions or will decease. In the civil law, the unborn child has no independent status and the will of the mentally competent mother in such situations has priority. The civil law makes no special references to the pregnant woman, mentally competent but with "particular ideas", nor to the imprudent or irrational ones and nor to other categories. The conclusions of the Health Committee Maternity Services and Changing Childbirth in this regard suggests that every woman has a pivotal role in her own obstetrical assistance, and seldom the alternative options are criticized in the present. The choice must be though formulated in the informational context [2].

THE MODERN CHILDBIRTH – A CASCADE OF INTERVENTIONS

Beginning with pre-conception and ending with the post-partum period, the childbirth today is accompanied by a multitude of interventions, more or less medical, more or less necessary. Even the term *natural birth* is defined as a way of giving birth characterized by a tendency for physical and mental hygiene of the pregnancy and labor. A series of measures are indicated to be carried on and/or the follow of a series of programs is recommended, which, finally, are leading to the accomplishment of the initial objective – the natural birth.

In this context, the obstetricians are facing patients demanding advice to follow prenatal practices about which, sometimes, they hear for the first time and this is because the prenatal preparation courses are more diversified and sophisticated – prenatal aerobics or prenatal kinetotherapy, Pillates exercises or Kegel exercises, breathing and Lamaze techniques or massage, counseling for breast-feeding or music therapy, etc [3].

PAIN MANAGEMENT DURING LABOR

Regarding the pain management during labor, this also can be more or less medical/medicated. Thus, the natural birth trough Bradley method is carried out without the help of medication or surgical interventions, only using relaxation as a way of escaping the pains of birth. The birth with the help of hypnosis uses the natural state of hypnotic trance and profound relaxation in order to allow the unconscious to overcome the fear and anxiety associated to labor and birth as well as to increase the confidence and the trust in the natural capacity of the organism to give birth. The birth under water is characterized in a larger concept of guidance during labor with minimum intervention and only when needed, the socalled "naturist attitude", the active role of the woman being non-medically sustained.

When asked whether the preparation programs are useful or not, the answers are always argumentative. Thus, if there are no pregnancy's pathologies or pathologies associated with the pregnancy or clear contraindications regarding one of the prenatal preparation methods presented above, then they are clearly beneficial; nevertheless, many studies show that nor the prenatal relaxation techniques or the breathing techniques don't reduce the need for epidural during labor [1].

THE ANESTHESIA IN OBSTETRICS

Starting during the 80's. constant interactions took place between the reorganization the hospitals of and professions in the field of healthcare, on one side, and the technological progress, on the other side. These interactions are better illustrated in the history of the epidural. The anesthetics and, especially, local the epidural anesthetics are not novelties. The novelty is represented by the popularity of the epidural during child birth. After 1980, the extremely frequent demand for epidural lead to the founding of a new discipline anesthesiology. the obstetrical The appearance of obstetrical anesthesiology was, in its turn, the source of many technological discoveries. Because the substance injected during a simple epidural anesthetized also the nerves contracting the muscles, the need appeared for more recent and sophisticated versions of the epidural (ex. Walking epidural, peridural rahianesthetics, etc.). The main effects of these progresses in the field of anesthesiology are the enhanced acceptability degree and the enhanced safety degree of the cesarean surgery.

THE CESAREAN SECTION IN THE PRESENT SOCIAL CONTEXT

In the vital statistics, the cesarean is a cause referring to both birth and death. An analyze of the frequency of the cesarean surgeries, in the contemporary social context, implies to observe the modifications these induce in maternal mortality level, perinatal mortality and birth rate and, eventually, their relation to the safe contraceptive measures, even extremely sure as tubal ligation – achieved in the majority of the cases during a cesarean surgery (usually during the second cesarean surgery).

The reports of all the studies having as objective – the demographical impact of the cesarean operation – show that, on long term, this has a positive influence on the decreasing of the birth rate [4, 5].

The 20'th century brought profound changes in the birth assistance. Three elements contributed in a decisive way to the radical change of the reserved prognostic of the cesarean surgery: the standardization of the surgical technique, the progresses in anesthesiology and post-surgical intensive care [6].

The evolution of the indications for cesarean surgery has a multifactor character. The perfection of the effective fetal surveillance methods both before and during birth influenced the most the evolution of the cesarean indications. This way a significant decrease of the intra-uterine and neo-natal fetal mortality was observed, but an increase of the number of cesarean surgeries for chronic fetal distress (malformations, prematurity, etc.) and/or acute fetal distress (fetal distress at the beginning of the labor) was also observed [7].

The high rates of cesarean births represent one concern of the international public health. In this regard, more universities and medical centers in the world are developing efforts and plans to reduce the rate of the cesarean surgeries. All the high medical authorities in the world (WHO, etc.) assert that 15% of the first pregnancy women and 65% of the post cesarean uterus represent an ideal incidence for cesarean surgery. As regards the cesarean surgery, the causes leading to this alarming percent must be analyzed and decisions must be made in order to situate the cesarean index in the limits proposed by the WHO, even if in some countries like Germany the cesarean surgery is done upon request. In the present context, maybe it is the right moment for the obstetricians to be once more the decision making factor regarding the way to finalize the birth [8, 9].

While waiting for the results, Flamm' saying seems, more than ever, in actuality: "In the next century, our descendents will smile looking at our cesarean index. The question is if they will think of it to be ridiculously high or ridiculously small"[8].

THE NATURAL BIRTH IN THE PRESENT SOCIAL CONTEXT

The natural birth today no only it does not resemble with a child birth from one decade ago, but seems to implicate more specialists than a cesarean surgery and to put the woman to a cascade of interventions – fetal monitor, ocitocine perfusions, epidural anesthetics – without taking into account all the futurist prenatal strategies; sometimes detrimental and not beneficial for the mother and the child.

In such conditions, the authentic expulsion reflex fails to appear, and only the reflex provoked by the head or the pelvic region of the fetus on the perineum remains. The term expulsion reflex of the fetus, used for the first time by Niles Newton, was interpreted as the effect of a sudden and extreme reduction of the neuro cortex activity, thus making possible the synthesis of a hormones complex. The reflex is characterized by a short series of irresistible and incontrollable contractions, leaving no room for the willing motions. The prerequisite condition of this reflex is a situation of absolute intimacy, maybe in the presence of an experimented, maternal, discreet and silent doula and by no means in the presence of the partner or the physician.

Speaking about the pro natural exaggeration, the natural birth without removing first the pubic hair is, at first, an exaggerated naturist attitude, but seems sufficiently founded. According to the Cochrane Database, large studies showed that unshaved pubic hair during birth (even instrumented birth) did not favored complications like infections or dehiscent perineum sutures [10].

Regarding episiotomy, this also seems for the moment out of trends. According to the Cochrane Database, the results of eight studies including 5500 cases revealed similar effects for both restrictive practice of episiotomy and routine episiotomy, but a higher risk for trauma in the anterior perineum was registered in the case of restrictive practice of the episiotomy. A Norwegian study, including 8000 women giving birth naturally, established that the episiotomy does not reduce the risk for perineum lacerations and that vacuum is less dangerous for the perineum than forceps. The statistics show a much larger rate of the routine episiotomy in the civilized countries up against those under developed, fact somehow revealed by the increased incidence of routine episiotomy in the case of obstetricians up against midwifes. Even the World Health Organization, based on strong proofs, adopted a firm position against routine episiotomy. All the new techniques of prenatal preparation and labor management, should lead themselves to a decrease of the episiotomies percent, but probably it lacks the patients of the old times midwifes [11].

About the natural birth with the help of forceps we speak in a past tense since the expression "prophylactic cesarean" appeared the literature. in the understatement being that the "prophylactic" objective is avoiding any alteration of the pelvic floor (leading to urinary or anal incontinence, problems related to the sexual sensibility and vaginal prolapsed) and, not least, decreasing the fetal morbidity, specific and complex, inherent to this maneuver. There are anyway voices stating that the cesarean rate would considerably decrease if the forceps application would reinvent itself [12].

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THE NATURAL BIRTH AFTER CESAREAN SURGERY

In the case of a natural birth after a cesarean surgery VBAC (Vaginal Birth After Cesarean), the main risk factor is the inducement of labor. According to a study on this subject, the risk multiplies 15.6 times in the case of inducing labor with the help of prostaglandins and it multiplies 4.9 times in case of induced labor without the help of prostaglandins there are also other factors that may increase the risk of uterine rupture - the mother's age over 35 years old, cesarean followed by fever, the interval between the two births smaller than 18 months, the single plan suture of the uterine section. The axiom of the obstetricians, perpetuated during many decades (Cragin, 1916) is: "once cesarean - always cesarean", based on the fact that the uterine scar would not resist to a subsequent labor, but the modern trend in the USA is to negate this rule. The result of a study, including all the American houses of birth, showed that, for 1453 women who came to these centers to have a vaginal birth after a cesarean, 87% succeeded. Another huge study, including 17 898 women trying to give birth on vaginal way in 19 American teaching hospitals showed that, in this context, the success rate was 73.4%. For obvious reasons, these evaluation systems cannot consider the intimacy degree that may prove to be the most important success factor [13].

THE BIRTH IN THE PRIVATE SECTOR AND THE BIRTH AT HOME

The natural (vaginal) birth in the private sector, where the patient herself choose the way to give birth (based on an informed agreement) and without contraindications from the physician, should proceed in optimal parameters, because we can assume, beside the conditions provided by the clinic, the patient also comes with a screening and a correct prenatal "training" and an organism as "qualitative" as possible. It is important to mention that in the private sector the access of the future fathers is common, fact that also can be beneficial. Nevertheless, the natural birth in the private sector is not inexistent, but seems to be on the verge of extinction. The statistics in the United Kingdom, for example, show a double incidence of the cesareans in the private sector up against the public sector, and Brazil registers a rate of 80% cesareans in the private sector compared with 35% in the public sector. In Romania, the births in the private sector are at the beginning, but the trend is similar.

Presently, the child birth is indeed seen as a technological and medical event, and together with the fear of a possible disaster leads the families towards more sure clinics. The choice of less populated private clinics reveals nevertheless, nostalgia for the child birth at home. The true birth at home was and will always be, both in the civilized countries and in the rest, an area of midwife, a reason for the majority of the physicians not to enjoy the idea [14, 12].

THE FUTURE OF THE RELATIONS BETWEEN MIDWIFES AND PHYSICIANS

The countries where the number of the cesareans is astronomic are those where the number of obstetricians is much higher than that of midwifes. This group includes, surprisingly, the largest part of Latin Taiwan, America, China, India. etc. Contrary, the countries where the positive statistical data are accompanied by a moderate rate of cesareans are those where midwifes ensure the basic needs. This group includes Holland, Sweden and Norway. In an intermediary situation are the USA, the Great Britain, France, Germany and Japan. "The reconsideration of the relationship between midwifes and physicians is an unavoidable objective on the long term" thinks Michel Odent. It is necessary to rediscover the authentically midwife, he says. "I dare to guarantee that the day when all the midwifes will be mothers who gave birth without medicines and without interventions, the astronomic number of cesareans will become history" affirms the same Michael Odent [15].

THE LONG TERM EFFECTS OF NATURAL BIRTH AND OF THE CESAREAN

In the context of the present day obstetrics, we must found urgently answers to questions like:

- Which are the consequences on the long term of a child birth after triggering the labor?

- Which are the consequences on the long term of a cesarean birth without labor?

Expecting a new generation of studies, we must observe that the majority of research promote incontestable effects – on the long term – of the natural birth on the physical and mental health of the mother and the fetus.

GREAT DEFENDERS OF THE NATURAL BIRTH – STUDIES PRO NATURAL BIRTH

More studies researching "the alteration of the capacity to love" sustain that the hormones liberated at both the mother and the fetus during labor have a specific role in the mother – child interaction. Today, we may proclaim that no matter what face of love we analyze, the hormone oxytocin also plays a role (see the epochal experiment of Prange and Pedersen, who had the idea to inject oxytocin in the brain of female virgine mice in order to induce a maternal

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THE FUTURE BELONGS TO THE NATURAL BIRTH OR TO THE CESAREAN?

I, who joyfully am an obstetrics – gynecology physician, I must recognize I enjoied reminding you the beauties of obstetrics, but I believe that the future belongs to the cesarean surgery, that we are already standing in front of a cesarean borne humanity, and in order to invite you as well to reflect, allowed me to launch the question, question that ends the book Cesarean by M. Odent, "May the humanity survive to the safety of the cesarean?" [15].

Or, maybe, we should wait for the biological and ecological transformations that brought us to this point and that certainly are not over, to change our opinions, objectives and expectation.

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Correspondence to:

Sas Ioan

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INFLUENCES OF DRINKING WATER COMPONENTS IN TIMIŞOARA WATER SUPPLIES ON CARDIOVASCULAR DISEASES RISKS

Lupșa I.¹, Tulhină D.¹, Timar R.², Marin Z.¹, Gabriela Brinzei G.¹

1. National Institute of Public Health Bucharest – Regional Center of Public Health Timisoara, Environmental Health Department

2. The University of Medicine and Pharmacy "Victor Babes" Timisoara

REZUMAT

Bolile cardiovasculare (CVDs) sunt cunoscute că reprezintă aproximativ 50% din cauzele de deces în aproape toate țările, fiind implicați o multime de factori de risc (fumatul, obiceiurile alimentare, lipsa de exercitii, stresul, obezitatea, tulburările metabolice și altele), printre care continutul de calciu si magneziu în apă potabilă. Obiectivul studiului nostru a fost de a evalua expunerea a cetățenilor din Timișoara (România, județul Timiș), la apă potabilă din surse de suprafață (sistem publică de apă al orașului), comparativ cu de apa de fântână (> 80 m adâncime). Într-un mod randomizat 518 de subiecți au fost intervievați în detaliu cu privire la obiceiurile lor alimentare, istoricul consumului de apă potabilă, stil de viață, fumat, examinarea fizică a fost făcut, precum și probe de sânge au fost luate în scopul de a evalua tulburări metabolice și de nivelurile de calciu și magneziu. Probele de apă de supeafțăși apă de fântână au fost analizate și determinați calciu, magneziu și duritatea (H). Valorile medii anuale au fost comparabile (AMV-SW-Ca: 35.81 ± 3.22 mg / L, AMV- WW-Ca: $54.5 \pm 2.17 \text{ mg} / L$; AMV-SW-Mg: $16.5 \pm 5.10 \text{ mg} / L$, AMV-WW-Mg: $28.78 \pm 2.18 \text{ mg} / L$ L; AMV-SW-H: 10.3 ± 6.75 dH, AMV- WW-H: 14.6 ± 3.07 dH) și a arătat o diferență extrem de semnificativă (p < 0,0001). Riscul relativ de a dezvolta boli cardiovasculare în caz de consum doar de apă potabilă de suprafață a fost calculat și sa dovedit a fi extrem de semnificative (RR = 4.421, 95% CI: 2.952 - 6.621, p < 0,0001). În concluzie, expunerea cetățenilor din Timisoara la apă potabilă de suprafață este foarte importantă și aceștia au un risc ridicat de a dezvolta boli cardiovasculare.

Cuvinte cheie: boli cardiovasculare, de apă potabilă; duritatea apei, calciu; factorilor de risc; magneziu

ABSTRACT

The cardiovascular diseases (CVDs) are known to represent about 50% of death causes in almost all the countries, due to a lot of risk factors (smoking, nutritional habits, lack

of exercises, stress, obesity, metabolic disorders and others), among which the calcium and magnesium content in drinking water can also play its role. The objective of our study was to asses the exposure of the citizens in Timisoara (Romania, Timis County) to drinking water (DW) from surface water supplies (public water system of the town) versus well water (>80 m deep). In a randomized way 518 subjects were interviewed in detailed concerning their dietary habits, drinking water histories, lifestyle, smoking; physical examination was done as well as blood samples were taken in order to assess metabolic disorders and calcium and magnesium levels. The surface water (SW) and well water (WW) samples were analyzed for calcium, magnesium and hardness (H) and their annual mean values (AMV) were compared (AMV-SW-Ca: 35.81±3.22 mg/L, AMV-WW-Ca: 54.5±2.17 mg/L; AMV-SW-Mg: 16.5±5.10 mg/L, AMV-WW-Mg: 28.78±2.18 mg/L; AMV-SW-H: 10.3±6.75 dH, AMV-WW-H: 14.6±3.07 dH) and it showed an extremely significant difference (p < 0.0001). The relative risk to develop cardiovascular diseases by drinking only surface water was calculated and it was found to be extremely significant (rr=4.421, 95% CI: 2.952 to 6.621, p<0.0001). In conclusion, the exposure to surface drinking water for the citizen in Timisoara is very important as they have a high risk to develop cardiovascular diseases.

Keywords: cardiovascular diseases; drinking water; water hardness; calcium; magnesium; risk factors

1. INTRODUCTION

Cardiovascular diseases are responsible for half of all deaths in the developed countries, and it is a main cause of death in many developing countries as well. Overall, it is the leading cause of death in adults [1].

In the European Union the prevalence of CVDs is about 36% [1]. Romania, as well as Timis County, has to deal with a terrifying figure of 63% [2].

Risk factors are divided into two categories: major and contributing. Major risk factors are those that have been proven to increase the risk of heart and vessels diseases. Contributing risk factors are those that doctors think can lead to an increased risk of heart and vessels diseases, but their exact role has not been proved or defined.

The more risk factors a person has, the more likely he will develop a heart or vessel disease. Some risk factors can be changed, treated, or modified, and some cannot. But by controlling as many risk factors as possible through lifestyle changes, medicines, or both, one can reduce the risk of heart and vessel diseases. In Eastern and Central European countries the incidence of cardiovascular diseases is raising. In some economic developed countries (USA, Australia, Finland and Sweden) the incidence of cardiovascular diseases decreases about 3-4% every year, due to coherent health related projects [3].

There are several risk factors for CVDs in the major category; some are controllable, others are not. Uncontrollable risk factors include: male sex, older age; family history of heart disease; post-menopausal status; race (African Americans, American Indians, and Mexican Americans are more likely to have heart disease than Caucasians).

Emerging uncontrollable risk factors include: elevated levels of lipoprotein(a), Creactive protein (CRP), homocysteine; low levels of adiponectin; some evidence of higher levels of fibriniogen and plasminogen activator inhibitor 1 (PAI-1).

Still, there are many risk factors that can be controlled. By making changes in the lifestyle risk for heart disease can actually be reduced. Controllable risk factors include: high LDL, or "bad" cholesterol and low HDL, or "good" cholesterol; hypertension (high blood pressure); physical inactivity; obesity (more than 20% over one's ideal body weight); diabetes; cigarette smoking; too much alcohol; unhealthy diet (fat, salt); uncontrolled stress and anger.

However, these classic factors do not entirely explain the worldwide variability of CVDs [4,5].

In order to understand better the determinants of CVDs, particular attention has been paid to environmental factors (belong to contributing risk factors for CVDs), such as weather, air pollution or the mineral content of DW.

Timisoara has 350000 citizens and about 90% of the distributed DW comes from the river Bega.

We designed our study in order to compare the quality of the mentioned river DW with that of groundwater from the wells (>80 m deep, drived in the last 17 years) in Timisoara, as well as their influence on the CVDs, considered a major public health problem.

2. METHODOLOGY

2.1 Subjects

The study was undertaken in Timisoara during the year 2005. During the whole year 518 subjects were chosen (the first 10-15 patients – age over 20 years, presented every Monday at the 5 general practitioners, distributed equally in the town).

2.2 Study protocol – Questionnaire, clinical examination and anthropometric measurements

Clinical baseline examination including anthropometric measurements was performed by physicians specially trained for this task. In addition, they were responsible to fill in a specific questionnaire. The interviewers obtained information on medical history, age, sex, socio-economic status, smoking status, alcohol consumption, diet. source of drinking water (well or tap, at home and working place), period of time drinking the same water type, daily water intake, use to food preparation, stress, physical activity (meeting current physical activity guidelines - at least 30 min of moderate physical activity, defined as energy expenditure >3.5kcal/min, on 5 or more days per week). Body weight was measured using electronic weighting scale. Stature was measured using a stadiometer. Waist circumference was measured using an anthropometric tape (needed to calculate the body mass index -BMI >30 kg/m2 for obesity, and waist-hip ratio - WHR >0.95 for men and >0.85 for women). Skinfold thicknesses were measured using skinfold calipers (taken at the triceps. biceps, subscapular and suprailiac sites as an indirect measure of body composition; three values were taken from each site and the median value was representative skinfold as the taken measure; the median of each site was then summed to produce a sum of skinfold Prior major cardiovascular thickness). events were defined as a history of stroke and/or myocardial infarction. Smoking was defined as persons smoking one or more cigarettes/cigars/pipes a day; al others were classified as non-smokers. A 12-lead ECG was recorded and subsequently coded by a trained physician using Minnesota codes; ischemic heart disease known was diagnosed based on the history or an ECG suggestive of myocardial infarction or myocardial ischaemia; left ventricular hypertrophy was diagnosed by Sokolow-Lyon voltage criteria. Arterial blood pressure was measured twice with a Hawksley random-zero sphygmomanometer and appropriate cuff size following at least a 10-min supine rest (high blood pressure was defined as $\geq 140/90$ mmHg).

CVDs we refered to were those classified by ICD-10 (I10-I15, I20-I25, I60-I69, I70-I79).

2.3 Laboratory tests

Fasting blood samples (5 mL venipuncture) were collected and analyzed were performed on a photometric system: glucose ("GOD-PAP" enzymatic photometric test), total cholesterol ("CHOD-PAP" enzymatic photometric test). HDL-cholesterol (enzymatic colorimetric test). LDLcholesterol (calculated using the Friedwald formula), triglycerides ("GPO-PAP" enzymatic-colorimetric test), calcium (based on formation of color complex between calcium and o-cresolphtalein in alkaline medium) and magnesium (photometric test xylidyl blue). OGT test using was performed where criteria matched.

2.4 Water samples

For the involved subjects water samples, for both, residential and occupational, were analyzed in terms of calcium levels and hardness. Out of 65 wells in Timisoara 39 were included in the study. On the other hand 15 locations were sampled for surface drinking water (tape water). Water samples were taken from each sampling point 4 times a year (every 3 month), in order to avoid exposure misclassification.

For hardness determination the water samples were collected in 1 L glass bottles, washed before samples collection with HCl 10 % and bidistillated water. The water samples were stored for a maximum 8 hours and stored at 2-8°C. The method of determination was the complexation of metallic cations which give the water hardness, with titriplex III, at pH=10, in presence of eriochrome black T indicator. Results were given in German hardness degrees (dH).

For determination of calcium concentrations water samples were collected in 1 L glass bottles with polished stopper, washed before use with sulfochromic acid, current water, azotic acid 4 % and bidistillated water. The water samples were stored at 2-8°C. Arrived in the laboratory calcium determination was performed immediately. The calcium analysis is of complexonometric type, with Titriplex III (Disodium dihydrogen ethylenediaminetetraacetate). The end of reaction is considered when the color of solution pass form red to violet in presence of complexonometric indicator murexide and naftol green B.

Magnesium concentrations were calculated by making the difference between the former two values.

2.5 Statistical analyses

All data were analyzed using EpiInfo version 3.3 and Instat 3. A two-tailed t-test was performed in order to examine the differences between the characteristics of the two types of DW sources (surface water versus well water). Data are presented as mean±SD. A significance level of p<0.0001 was set for all water sample analyses. The relative risk to develop cardiovascular diseases by drinking only surface water was also calculated.

3. RESULTS

This study represents a small part of a prospective cohort study (screening for cardiovascular, nutritional and metabolic diseases in Timisoara and Timis County). The aim of the study was to identify the major risk factors for the above mentioned diseases. in order to elaborate an intervention strategy to improve cardiovascular status.

As it was mentioned earlier, there are major differences with regard to risk factors and the development of CVDs. Calcium and magnesium water concentration, as one of the risk factor in developing the CVDs was aiming for this study.

Poor water quality, hyperchlorination with elevated trihalomethan concentrations and organoleptic consequences result in a major behavior change of the population in the area which swiched from tape to well water. The study envolved 518 subjects and studied back in 2005. In 2005 we focused on this issue and 518 subjects entered the study. They were undergoing all the measurements and tests mentioned in the former chapter revealing 288 subjects with CVDs (55.60%), with age between 32-83 years (63% between 45-65 years). At least one or more CVDs risk factors were revealed by the questionnaire or by the measurements.

6.4% of the subjects with CVD were detected with hypocalcaemia and only 1.7% with hypomagnesaemia, although the food questionnaire revealed the calculated magnesium intake below the necessary daily amount of 300-400 mg at 17.4% of them; no correlation with the type of water source or socio-economic status could be made. The daily water intake is shown in Table 1.

Subjects	Number	Minimum (L/day)	Maximum (L/day)	Mean (L/day)	SD
non CVD	230	0.30	2.50	1.0101	0.1993
CVD	288	0.30	3.00	1.0080	0.1905

Table 1. Daily water intake of the studied population

The applied questionnaire revealed four types of DW consumers: 50.8% of the subjects with CVDs drink only SW, 35% drink only WW, 6.6% drink both types and 7.3% drink only mineral water and soft drinks. The same type of water was used for food preparation.

Trace element exposure from water can vary considerably among individuals within a locality. In our analyzed samples homogenous values of the hardness, calcium and magnesium levels were found for the WW samples, respectively for the SW samples. Their ranges are shown in Table 2.

Table 2. Ranges of H, calcium and magnesium levels in the analyzedWW and SW samples

	Minimum value		Maximum value		
	WW	SW	WW	SW	
H (dH)	9.87	4.01	22.49	11.99	
Ca (mg/L)	29.04	16.03	88.17	48.89	
Mg mg/L)	21.87	6.07	39.38	20.90	

The AMV for hardness, calcium and magnesium levels were calculated and compared in Table 3.

calcium and magnesium levels in Sw					
	SW		WW		
	AM V	SD	AM V	SD	р
H (dH)	10.3	6.75	14.6	3.07	<0.00 01
Ca (mg/L)	35.8 1	3.22	54.5	2.17	<0.00 01
Mg (mg/L)	16.5	5.10	28.7 8	2.18	<0.00 01

Table 3. Comparison between the AMV for hardness,calcium and magnesium levels in SW

The relative risk to develop cardiovascular diseases by drinking only surface water was calculated and it was found to be extremely significant: rr=4.421, 95% CI: 2.952 to 6.621, p<0.0001.

3. DISCUSSION

Salutary properties of certain waters date back to Hippocrates. The health benefits of mineral water were studied, particularly in first Eastern European spas. But the epidemiological data relating water consumption with health appeared only in de 20th century [6]. Related to the development of CDVs, specially attention was given to DW since the publication of the articles by Kobayashi[7] in 1957 and Schroeder in 1960 [8-10] in which they showed the inverse or protective association between DW hardness and CVD mortality.

An inverse or protective association of water hardness with CVDs was reported in most, but not all, studies. In studies involving very large geographical areas, there was a strong tendency to observe lower cardiovascular mortality with increasing hardness of drinking water sources [11-29].

Very small inverse or no associations, or exposure-response relationship associations were frequently not found in studies of small regions or when borough communities or counties were compared [30-35]. In our study we had the opportunity to investigate subjects living in the same geographical area, but drinking water with different hardness degree and trace elements composition (all polyvalent cations contribute to what is known as water hardness). So, exposure was quantified at individual level, and geographical gradients in temperature and other factors and other biases could be ruled out, as the association observed at area level is different from that which exists at the individual level [32].

Different studies emphasize that a protective effect against CVDs occurs only at a level over 10.00 dH [36]. Some authors [37] reported that one unit in German degrees of water hardness decreased the risk of acute myocardial infarction by 1%. The AMV for hardness, calcium and magnesium levels show an extremely significant difference (p<0.0001) between the two types of water sources, as the SW originates from the river Bega, who lost a lot of its mineral content during its flow from the mountains to the Timis County, which is a plain region.

WHO experts [38] showed that the upper estimates of the risk ratios for soft compared to hard water averaged approximately 1.25 cardiovascular diseases. for all The calculated relative risk value to develop cardiovascular diseases by drinking only surface water is an extremely significant one (rr=4.421, 95% CI: 2.952 to 6.621, p < 0.0001), as the subjects we studied were matching for the geographical area. homogeneity of exposure, had no

differences in daily water consumption and had a long time period they were drinking the same water (10-17 years).

The dietary intake of calcium has an important CVD protective role, but Ca in DW, which is poorly assimilated, represents a negligible element of the Ca intake [39]. Subjects in our study drinking only WW used it also to prepare food. This is benefic as the mineral content in the prepared food remains highly unchanged and favors the digestive solubility of foodstuff6. The higher amount of Ca in DW may act as anticorrosive, encrusting agent for the pipe, protecting them against water acidity that produces the release of toxic heavy metals, especially lead and cadmium. They both have detrimental cumulative effects on the cardiovascular system [39].

Also a positive effect on CVDs could arise from the possible role of Ca in the development and control of primary "essential" hypertension in humans40. Some animal data and observational studies in humans support the hypothesis that Ca supplementation can reduce blood pressure. In case of Mg, the quantitative water contribution may represent the amount of Mg required to bring an insufficient dietary Mg level to a correct level and reduces cadmium absorption [39]. So, the average amount of 2 L of DW daily intake of the subjects in our study increases the Mg intake with 20 to 200 mg/day28. The benefits of cooking with WW refer also to Mg. Mg participates in many different biological functions and in case of Mg deficiency it can produce insulin resistance and accelerates the development of atherosclerosis and the induction of thrombocyte aggregation, therefore, it is described as a risk factor for acute mvocardial infarction and for cerebrovascular disease [41-43].

Some authors [13,44] evaluated the composition of hard and soft water in terms of several biologically important elements (including cadmium, lead) as possibly

increasing cardiovascular risks and selenium, zinc, and silicon as possibly being protective. Artificially softened water may contain high levels of sodium producing hypertension. These findings emphasize the importance of measuring specific constituents rather than water hardness.

The relationship between various exposures and risk factors for cardiovascular disease can be imagined as a web with complex cross influences, so you can never refer to a single cause or a single agent (e.g., a water constituent), with direct and indirect influences in different situations.

4. CONCLUSION

The studied population in Timisoara, Timis County showed an inverse positive trend of developing CVDs in subjects drinking hard water versus the subjects drinking soft water (in the same area and time period). The relative risk for cardiovascular diseases related to consumption of surface water only was an extremely significant one (rr=4.421, 95% CI: 2.952 to 6.621, p<0.0001).

As calcium and magnesium are the principal components of hard water they may have a protective effect on CVDs. However the issue is not cleared evidenced yet. The biochemical arguments that we emphasized support the need to continue with a followup study and to add other specific constituents measurements, rather than water hardness, due to the cross influences of the risk factors and many confounding factors. We also consider being benefic to extend the study to other geographical areas order to detect other possible in environmental influences.

Given the current status of knowledge regarding the relationship between water hardness and CVDs, it is not appropriate at this time to recommend a national policy to modify the hardness or softness of public water supplies, as the data we already have do not indicate clearly which additions to soft water would benefit human health, as well as the costs/benefits.

The WW in Timisoara could be an important source of certain essential

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Correspondence to:

Lupșa Ioana

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Adress: National Institute of Public Health Bucharest – Regional Center of Public Health Timisoara, Environmental Health Department, Bd. Dr. V. Babes nr. 16, 300226 Timisoara, Romania

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THE LIFE AND WORK ON THE MARINE OIL PLATFORMS

Herman H.¹, Nita G.¹, Deliu N.¹, Calota R.², Corici S.²

1. National Institute of Public Health Bucharest, Romania

2. Surgery of Petromar, Constanta, Romania

REZUMAT

S-au studiat condițiile de viață și muncă pe platforme petroliere marine de foraj și extracție din Marea Neagră pentru evidențierea și combaterea factorilor de risc pentru organism. Metodele de cercetare au fost : analiza muncii și a odihnei, investigarea factorilor de mediu, ancheta alimentară, investigarea dinamică a unor indicatori funcționali ai organismului, evaluarea sănătății psihice, analiza morbidității. Indicatorii organismului au fost determinați și la țărm la subiecți de pe platforme. Platformele includ instalații tehnice și locuri de muncă exterioare și în încăperi, cu activitate de supraveghere, manuală și manual – mecanizată. Sunt încăperi pentru locuit, odihna fiind exclusiv sedentară. Factorii ambientali importanți sunt : microclimat confortabil în zona locuită, condiții hidrometeorologice nefavorabile, zgomot continuu, depășind normalul, vibrații generale depășind limita de foraj, tangajul platformei la valuri mari și vânt puternic, deficiențe alimentare, depărtarea de familie și societate, furtuni cu risc de accidente, explozie, naufragiu. Staționarea pe plarformă alternează cu staționarea pe uscat la fiecare două saptămâni. Morbiditatea evidențiază accidente mecanice, boli cu manifestări severe și incapacitate mare. Răul de mare apare frecvent în transportul naval între țărm și platforme. S-au stabilit măsuri complexe privind îmbunătățirea muncii și vieții pe platformele respective.

Cuvinte cheie : platforme petroliere marine, factori hidrometeorologici nefavorabili, solicitări fizice și neuropsihice

ABSTRACT

The working and life conditions on the rock oil drilling and extraction platforms of the Black Sea were studied to make evident and fight the risk factors for the organism. The research methods included: work and rest analysis, environmental factors investigation, food inquiry, dynamic assessment of some functional organism indicators, psychic health investigation, morbidity analysis. The organism indicators were assessed also onshore, in platforms subjects. The platform include external and in rooms technical installations, work places of supervision, manual and manual-mechanized activity. There are also inhabitable places, the rest is only sedentary. The important surrounding factors are: comfort microclimate in the inhabitable area, unfavorable hydro meteorological conditions, noise over TLVs, general vibrations exceeding the TLVs at drilling, platform pitching by great waves and wind, food deficiencies, storm with risk of accidents, explosion and wreck, the remoteness from family and society. The stationary period on the platform alternates with the onshore stationary at each two weeks. The morbidity makes evident mechanical accidents, diseases with severe manifestations and long incapacity. The seasickness appears frequently during the naval transport between the coast and the platforms. Complex measures were established to improve the work and the life on those platforms.

Keywords: marine oil platforms, unfavorable hydro meteorological factors, psychical and neuropsychic strain.

INTRODUCTION

The marine oil platform is a technological and social complex for exploring and exploiting the rock oil of the sea ground. It is a new environment for people, therefore this "man-machine-environment" system has special problems of hygiene and human health and there are not many studies on that domain. Some problems were approached by studies made at oil installations of the North Sea and Caspian Sea [1, 2, 3]. For this reason we have studied the life and the working conditions together with the organism strain on the Romanian marine oil platforms for drilling and extraction of the Black Sea aiming to establish measures for decreasing or avoiding the risk factors for the human organism and improving the work and life conditions on those platforms.

MATERIAL AND METHODS

A complex research methodology was established including:

- The platform equipment, work and life were analyzed by straightway observation, studying the technical documents and obtaining data from technicians and operators.

- Characterizing the working and rest environment, generally the life environment: microclimate, lighting, noise, vibrations, the possibility to pollute the air.

- The food inquiry during the months of March and July on the basis of the data obtained from the platform restaurant.

- Investigation of the organism reactivity on the platform during the work shift (two shifts: 6-18 and 18-6 h) in 50 subjects, assessing the following indicators: heart rate (HR), blood pressure, critical fusion flicker (CFF), concentrated (Toulouse Piéron test) and distributive (Prague test) attention,

before the work start, after 6 hours and at the end of the work. The HR was determined also during the whole shift every 15 minutes. The energy expenditure (EE) was established per operations (on the basis of Lehmann's and Muller's tables) in 20 subjects and of the HR values basis [6]. There is a relation between those two indicators and the operator's participation in work established by the work analysis movements, going). (position, Those indicators were determined also onshore, on 25 subjects from the platforms, in the first hours of the day work shift in the morning, at rest.

- Health investigations by:
 - Psychic health evaluation, by "Amiel and Lébigre" questionnaire and personality questionnaire "Woodworth", applied in 100 subjects from three platforms.
 - Morbidity analysis with temporary disablement in a period of three years for 1,100 persons working on the platforms, on the basis of the medical certificates.
 - Analysis of the health status in 300 platform subjects from the appointment to work on the platforms on the basis of the medical documents of the surgery.
 - Subjective symptomatology and personal opinions on platforms work and life investigation in 100 subjects by a questionnaire, on three platforms.

The obtained data have been statistically processed by the computer. The investigation has been made in summer, the month of July, the climate factors were determined also in the cold seasons of the year.

RESULTS AND DISCUSSIONS

Structure, organization, personnel

The platform is a metallic building suspended over the sea on the basis of support pillars inserted in the sea ground and water. It has more levels in vertical direction, with stairs between these ones, which include technical installations. outside workplaces on the platform deck, work and inhabitable rooms. The stairs are made from metal and have 15-20 steps of small inclination; some are suspended over the sea which is visible through the free space between the steps. On the platform decks in exterior there are installations and workplaces. The technical installations have active systems and apparatuses for measure and control, mechanical transport equipment and raising equipment. The installations run automatic construction. There are bv technical installations in work rooms with interior stairs. The social sector of the platform is a shut construction of 2-3 floors including inhabitable cabins with two or four places and sanitary installations, offices, food compartment and club. All the rooms - technical and social - have airconditioning installation for ventilation and heating according to the season. The water is ensured by salt elimination from the sea water and by water transport from the onshore and is deposited into tanks. The drinking water is ensured only by mineral water in bottles.

In our research period the majority of the platform staff was 30-50 years old (71%) and had a seniority of 5-15 years of service on the platform (83%). There are two alternative periods for the platform people: two weeks at home on the land, two weeks on the platform. On the platform the work, and therefore the rest, was carry out in two shifts of 12 h with weekly alternation: day shift (6-18h) and night shift (18-6h). In each shift there is a pause after 6 work hours. In special situation the working and life duration may exceed the two weeks because the sea transport is not possible (storm), especially in winter. On the platform the rest

is only sedentary, by sleeping, reading, watching TV. The transport between the coast and the platform is ensured by ship. Before the embarkation, the people are consulted at the surgery and the persons with problems are not embarked. On the platform there are only men working. The work on the platform is manual, manualmechanized and mechanized; an important activity is the supervision of the installation running.

The working and life environment

Climatic factors, platform microclimate. The microclimate of the inhabitable rooms is comfortable by conditioned air, but the air humidity is high: the relative humidity of 70-80% in winter and 70% in summer, at an air temperature of 20°C and an air speed of 0.10 m/s in winter and respectively, of 24°C and 0.06 m/s in summer. In the work rooms with conditioned air, the relative humidity is 70-90% at an air temperature of 19-25°C and the air speed of 0.8-1 m/s in winter and, respectively, 70% at 24-25°C and 0.10 m/s in summer. When the conditioned air is not in function, the air temperature is 26-28°C, with relative humidity of 60% and the air speed of 0.05 m/s in summer. The equipment which emanates heat increases the microclimate values so: 30-34°C, 40-60% and 0.07-0.5 m/s, therefore there are no thermal comfort conditions. In exterior, on the platform decks, the microclimate depends on the hydro meteorological conditions characteristic for the temperate continental climate, with four seasons in a year, of our geographical zone. In summer the air temperature is of 24-25°C, at a relative humidity of 70-80% and the air speed from 2.2-2.5 to 8-10 m/s (small or moderate wind). The sea water has the temperature of 7-8°C at a greater depth over 40m and the waves may have 4m in high, without storm. The sun radiation heats the equipment, platform metal and the especially in summer, when the sunny period is greater. The operators come into contact with the metallic surface of the 60

equipment at some activities (dyeing, assembling or disassembling parts).

In the cold season of the year, on the exterior platform, the climatic factors are inadequate: low temperature (+ 10°C to under 0°C), relative humidity of 70-90%, high speed of the air movements (8-10 m/s), which increase much during the storm (very high wind). The wind speed limits the standing or the activity on the exterior platform because of the accident risk at great speeds. There are also atmospheric precipitations (rain, snow) which may determine accidents by fall, by sliding, especially at frost and the contact with the cold metallic surface of the equipment and of the platform may also favor the accidents. The great waves and the high wind cause the platform pitching. Therefore, during the cold seasons, the climate on the platform in exterior is unfavorable. This imposes the use of clothes to protect against the cold and the atmospheric precipitations. In summer, even at a great air temperature and a high humidity, the climate is generally acceptable for the psychical effort because there are permanent air currents. The important sunshine imposes clothes against the heat stroke and also interventions to shade, when it is possible, by cabins in the workplaces.

The lighting. The lighting is natural, artificial and mixed, according to the workplace emplacement, room construction, season, hour, sky state. The artificial lighting is ensured in the rooms by tubular fluorescent lamps and incandescent lamps and in exterior by lamps with high pressure vapors (of mercury, sodium) and also by tubular fluorescent lamps. In exterior on the stairs and the platform decks, in the night, there are also used individual lighting sources. A permanent lighting source is a torch on the extraction platforms. The lighting levels are sometimes under the necessary values (40-110 lx, necessary of 75-300 lx). Outdoors, during the day, there is great sun brightness by sun radiation reflected by the sea surface and the vast free surrounding space. During the night, a profound dark surrounds the platform, which must be very well illuminated outside, in the workplaces and on the circulation lines, especially the stairs, but without illumination differences or brightness in the visual field. In the night the illumination had good values (10-25 lx) on the circulation roads. In the night the platform is like a light "oasis" in the profound dark surroundings of the sea surface and the sky.

Noise and vibrations. The noise, produced by the equipment running, is present at all places of the platform, exceeding the TLVs. The highest level is in the work rooms under the main deck, till 100 dB (A), the TLV is 85 dB (A) or 75 dB (A). In the inhabitable rooms the noise level is permanently 65-75 dB (A), but the TLV for the inhabitable building is 35 dB (A) and for the sleep is 25 dB, values established by standards. The equipment running gives rise to general vibrations of 1-80 Hz, the high waves and wind produce the platform vibration of 1-3 Hz. The acceleration of the vibrations has a value of 6.3-16 Hz, exceeding the TVL on the drilling platform. The vibrations are permanent; therefore, also in the rest period and they increase the organism strain. The touch of the equipment surface determines the vibration transmission to the hands. The metallic construction of the platform together with its rigidity favors the transmission of the vibrations to the objects and materials of the platform.

Noxious substances. Emission of noxious substances to the platform air was not found.

Accident risks. There are many conditions for accidents on the platform, especially in winter (high wind, by self-fall, object fall). The stairs are a place favorable for accidents.

Organism strain

The organism strain is psychical and neuropsychic, produced by the work and the

special conditions of the platforms. The work is carried outside on the platform decks, sometimes at height and in rooms, including supervision and manual, manualmechanized and mechanized operations for equipment maintenance and interventions at installations with automatic running (borers, mechanics, electricians, only males).

Physical strain. The physical effort, with static and dynamic muscular activity is produced by posture (standing, sitting, vicious positions at interventions - bent, extension, flexion, knelt, lying), the large upper limb movements, the frequent displacement with climbing and descending stairs or equipment, manual force holding weights application, (parts, 70-100 materials). The HR was of beats/min. at supervision and of 85-110 beats/min. at keeping. The interventions produce a high effort (HR 100-150 beats/min). At assembling and disassembling parts the operator makes unscrewing and screwing up, acting by the hammer and the sledge hammer. That activity is only manual and there is an important physical effort. The operator makes frequent displacement during the supervision of the installation in order to include the whole zone he is responsible for. It is possible to make 39-44 displacements in one hour, therefore one displacement at each 80 seconds. The greatest strains are in the interventions on the drilling platforms. The energy expenditure was 2.35-3.5 kcal/min at supervision, 3-5 kcal/min at equipment maintenance and it increases to 7 kcal/min in interventions. The mean EE was 4 kcal/min, 240 kcal/h and 2,880 kcal/12 h at work and about 4,000 kcal/24h. It is important to remember that the rest is only sedentary, without variations, tiresome and takes place in rooms, lying near all the time, sleeping, reading or watching TV.

The neuropsychic charge is important. The sensorial strain is visual, tactile and olfactory for obtaining information on the equipment running, on danger appearance. The equilibrium sense is also strained at climbing and descending stairs, at work at height. The concentrate and distributive attention and the technical thinking participate also at work and there is an emotional state because of the special platform conditions. The responsibility and the remoteness from family and society increase the neuropsychic strain. The organism strain increases in damage and storm, when the platform people are more conscious of accident, explosion or wreck risk.

The levels of the organism indicators investigated were higher during the day shift than during the night shift, according to the circadian rhythm (Figure 1).



Figure 1. The organism indicators values during the work shifts on the platform

The significant decrease (p<0.05-0.03) of the neuropsychic test performance shows the organism fatigue, especially in the night. On the land, during rest (9-12 a.m.) the level of the organism indicators was lower, a

lower reactivity of the organism than on the platform where the subject's activation state is therefore higher because of the special conditions on the platform (Table 1).

Table 1.	The mean values of the organism indicators investigate onshore,	in repause, in
	the day time	

Indic	cators	Platform	Onshore
Heart rate	, beats/min	78 ± 2.16	67 ± 2.16
Blood pressure	systolic	138 ± 2.13	120 ±1.26
(mm Hg)	diastolic	84 ± 2.28	78 ± 1.20
CFF,	, Hz/s	39.20 ± 2.84	35.84 ± 2.84
	Concentrated, EC	94 ± 3.46	77.82 ± 3.50
Attention	Distributive:		
	CE	99 ± 3.46	96 ± 7.07
	Centiles	73.84 ± 15.46	44.40 ± 30

Food

The caloric food value was about 5,000 kcal/24h/man. Therefore it corresponds to the energy expenditure of the platform personnel. But there were qualitative deficiencies: the percentage of protein and (in March) was higher and fat of carbohydrates and vitamin C (in March) was lower than the necessary quantities. A lower carbohydrates intake decreases the organism effort capacity. The lower intake of vitamin C in winter and spring decreases the organism resistance to infections, cold and stress [7]. There is also a deficiency of food fibers, which are important for a good digestion. It is necessary to introduce fresh vegetables and fruits in the food during winter and spring. It may be also necessary to use vitamin C as medication during those seasons. A similar situation has been found in the investigations made on the oil platforms of the North Sea [2].

Subjective symptomatology

Regarding the subjective symptomatology, all investigated subjects stated that the activity on the platform is tiresome. The most plaints (60-43%) were: muscular and articular uneasiness, nervousness, headache, torpor, bad mood, weakness state. 22% of the subjects showed a fear sentiment, which is permanent only in 5% of the subjects. The fatigue state is present after work in most of the subjects (92%) and only by falling asleep avoided that fatigue. The questionnaires showed also the opinions on the fatigue cause: the noise is at the top (84%), followed by the neuropsychic strain, high humidity, vibrations, responsibility, physical effort, high wind, angry sea, ship journey to the platform and to the coast. The seasickness appears in 44% of subjects during the journey by ship, especially when the sea is not calm and the conditions on the ship are not good (example: the ventilation is reduced). The studies made on the platforms of the North Sea cite situations of violent appearance of the seasickness, resulting in the death of the persons which have been transported by closed boats in the case of accidents produced on drilling platforms imposing their unshipping.

Morbidity. The morbidity includes various accidents and diseases, with severe manifestations and long incapacity (mean duration indices of 24 days). At the top of the morbidity causes are: mechanical accidents (at work and out of work), predominating the fractures, often of more bones, with long recovery period, hyperalgic lumbosciatic and disc disease, digestive, respiratory and cardiovascular diseases, nervous disorders, skin infections, according to the working and life conditions of the platforms. Some diseases are singular but call attention on their gravity and cause, for example, release of an angina pectoris attack by climbing abrupt stairs (the subject was not in evidence with a cardiovascular disease) or existence of a lymphoma (neoplasm form) with death. Most accidents and diseases have appeared at home and may be a consequence of the cumulative effects of the platform conditions on some subjects, but also personal causes could produce these accidents or diseases. For the prevention measures, although the morbidity is not very frequent, but there are severe manifestations and long time incapacity, the structure of the diseases and accidents is detailed. So, the disorders of the locomotors system are on the second place after the accidents: there are: Lumbosciatic neuralgias frequently of hyperalgic character, spine affections (disc hernia and disc disease with chirurgical operation. ankylosis), articulation affections (arthritis, arthrosis). These disorders and affections may be produced by some traumatisms, meteorological factors or by the physical strain of the organism. The morbidity includes also digestive diseases: gastric ulcer, duodenal affections, appendicitis, hepatitis, gall bladder affections. The renal disorders are produced especially by the renal lithiasis which may be the result of the exclusive consumption of mineral water. There are also respiratory diseases affections favored by cold (amygdalate,

infections of the upper respiratory airways) and some persons with neurosis. Other disorders or diseases: skin infections (furuncles, folliculitis) which may be favored by small traumatisms, by poor individual hygiene. Some machine operators exposed to a high noise level have presented hypoacusia. The cardiovascular diseases are a problem for the life and work on the platform; therefore, the subjects suffering of these disorders changed the workplace.

Psychic health. At the questionnaire "Amiel and Lébigre", 80% of the subjects presented small scores (0-4.5), making evident that their psychic health is good. Only 1% of the subjects had a score of 5-13.5, which placed them in the category with increased risk for neurosis (19% of the subjects). The depression was evinced only in four subjects from the category with the score between 5 and 13.5. The highest score of this test (of 14) was not found. A score higher than 4.5 may be the result of the platform conditions, but also the result of the life and the activity carried on to the shore.

The results obtained at the personality questionnaire were analyzed according to the number of tendencies. 8% of the subjects had no tendencies, therefore a good result, and a normal state. Only 14% of the subjects had 3-4 tendencies and 68% of the subjects were without tendencies.

The causes of the disorders showed by the two psychic questionnaires may be

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represented by the platform conditions and/or out platform events. The state of those subjects before the activity on the platform is not known. Therefore it is not possible to compare these data with the situation before the appointment on the platform.

CONCLUSIONS

The emplacement of the oil platform over the sea and their metallic construction special working determine and life conditions, with special and various risks for the human organism. The most important factors in this domain are: the hydro meteorological unfavorable conditions, the noise and vibrations over the TVL's, the characteristics of the day light and of the darkness, the construction in vertical with frequent climbing and direction. descending stairs, the food with deficiencies in winter and spring, the organism physical and neuropsychic strain, the remoteness from the family and society, the inhabitable conditions, the travel by ship between the coast and the platform. Preventive technical, organisational, personal protective and medical measures, including also psychological and educative activity, regarding the life and work conditions on the platforms, are necessary. Complex measures were established to improve the life and working conditions on the studied platforms, places important as energy source.

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Correspondence to: Herman Hilda

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CHARACTERISTICS OF THE SMALL PUPIL'S DEVELOPMENT

Beiuşanu C.

Universitatea din Oradea, Facultatea de Medicină

REZUMAT

Caracteristicile principale ale copilăriei sunt reprezentate de creștere și de dezvoltare, deoarece corpul copilului suferă modificări morfologice și funcționale. Creșterea reprezintă o creștere cantitativă și constă în modificări ale dimensiunilor corporale sau a unor parți ale corpului. Dezvoltarea, este un proces complex, care constă în diferențe morfologice și structurale complexe și importante diferențe funcționale. Chiar dacă aceste două procese apar în același timp, ele nu au viteză și ritm egale. Acestea sunt influențate de o mulțime de factori, astfel încât este inexact sau chiar greșit să evaluăm creșterea și dezvoltarea copiilor doar din punct de vedere cronologic. Factorii care influențează creșterea și dezvoltarea în această perioadă de școlar mic sunt grupați în două mari categorii - factorii endogeni și factorii exogeni. De obicei, acești factori sunt asociați și acționează convergent, în sensul de a accelera ritmul de creștere si dezvoltare sau în sensul de a reduce sau opri temporar aceste procese.

Cuvinte cheie: copil, adolescent, comportamentul copilului, creștere, dezvoltare, școală, stil de viață, obezitate, factori de risc, clasă socială, televiziune, caracteristicile familiei

ABSTRACT

Principal characteristics of the childhood are represented by growing up and development, because the body of the child suffers morphological and functional changes. Growing up represents a quantity increase and it consists in modifications of body dimensions or some body parts. Development, is a complex process which consists in complex morphological and structural differences and important functional differences. Even that these two processes appear in the same time, they do not have an equal speed and not even one rhythm. These are influenced by a lot of factors, so that it is inaccurate or really wrong to evaluate the growing up and development of children only from chronological point of view. Factors which influence growing up and the development in this period of little school are grouped in two big categories - endogen factors and exogen factors. Usually these factors are associated and they act convergent, in sense of accelerating the rhythm of growing up and development or in terms of cutting down or temporary stop these processes.

Keywords: child, adolescent, child behavior, growing up, development, school, life style, obesity, risk factors, social class, television, family characteristics.

The main characteristics of the childhood period are represented by growing up and development, because the body of the child modified morphologically is and functionally. Growing up represents а quantity increase and it consists in modifications of the body dimensions or of some parts of the body. Development is a complex process which consists of complex morphological and structural differences and important functional differences. Even if these two processes appear at the same time, they do not have an equal speed and not even one rhythm. These are influenced by a lot of factors, so, it is inaccurate or really wrong to evaluate the growing up and development of children only from a chronological point of view [1,2].

The factors which influence the growing up and the development of little school pupil in this period are grouped into two big categories. The first category is represented by the internal factors – endogen factors, and the second group is represented by the external factors – exogenous factors. Usually, these factors are associated and they act convergent, in the sense of accelerating the rhythm of growing up and development or in the sense of reducing or temporary stopping these processes.

For this period of life, exogenous factors are numerous and very important. They are social factors, familial factors, alimentation, illness, climate.

Economical factors – the children who come from different social environments, with different economical standards present variations of body dimensions. It is important the welfare of the family, the professional formation, general knowledge of the parents, not only in order to ensure the home comfort and nutritional aspect (qualitative and quantitative), but also in order to show a permanent preoccupation towards the child's problems, to supervise the life style of the child from the point of view of alimentation, time to rest, physical and mental effort. Family climate has a remarkable importance, which is reflected by the parents' degree of intelligence and personality.

Emotional, affective and educational factors – it is about the child' sex, his position in the family, the quality of interaction with his parents, siblings and the other members of the family, personal preoccupations. It is important how the family approaches the concept of growing up, the parents and brothers' s concern about the physical and mental development of the child. It has been proved that a serious psychological stress has negative influence on the development of the child [3, 4].

Physical effort – this effort develops the parts of the locomotion apparatus and it affects breathing, blood circulation, nutrient exchanges, the regeneration processes and the neuro-endocrynological system. The exercises program must be carefully selected and adapted to the child's age and biologic potential [5,6].

Seasons and geographical climate – stature growing is accelerated in the spring months and weight increases in autumn. Some factors are important too: temperature, humidity, air pressure, ultraviolet rays and light (blind children are not affected by seasons succession, their growing is uniform). Temperate climate regions present a good climate for the growing up and development of children. Intensive and prolonged cold, warmth and excessive humidity, the desert climate and high altitude regions have negative effects on the child's growing up and development [7].

Alimentation – alimentation represents a benefit only if it is qualitative, quantity is not enough. An adequate global energetic contribution is necessary, but also a best rapport among the energetic, nutritional, plastic and bio-catalytic elements.

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Malnutrition – when it suddenly appears for a short period - for example during wars, major calamities -it is not too accentuated; the child retrieves partially or totally the delay. When it is chronic, growing up is reduced and the child becomes a small size adult. In case of improper growing up due to alimentation, usually the growth in weight is affected, the stature growing is affected later [8-10].

Illness – minor or short-time illnesses do not affect the rhythm of the growing up of children. Major illnesses with a long period of hospitalization or immobility, decreases considerably the growing up, but they could be recovered [11,12].

In the last years, a very important factor which influences the growing up and development is a phenomenon known as secular growing. Because of this, the studies about the growing up and development must be permanently updated.

The modifications of the body of the small pupil are numerous.

Bony system presents ample processes of development and differences.

- Intensive development of the bones of the face and the base of the skull

- The bones become stronger due to the consolidation of the functional lamellar system, which determines an increase of the bones resistance in case of the traction, torsion and pressure solicitations.

- There are proliferative processes with appearance of the epiphyses and sesamoid bones and finalization of medullar cavities [1]

- The distal ulnar epiphysis could be seen with x-rays at the age of 7 and the pisiform bone at the age of 10

- In this period, if we use some standard tables, we can appreciate the stature level of the child at the end of the growing up period.

- Because of fact that at the age of 6-7 the small bones of the hand and the muscles of the hand suffer an important development, it becomes possible to learn the writing technique; however, the practice of this activity must be made progressively, because the hand joints develop later, beginning with the age of 8-9.

- Bony system is very vulnerable in this period, because of the vertebral curvatures which are consolidated only now; cervical curvature and thoracic curvature are finished at the age of 7; because of this, it is necessary to be careful and develop a correct position and posture, to pay attention to the position of the legs, to the joints and the thoracic curvature

- Ilion, ischion and pubis start their fusion now but this process is finished at the age of 20-21 [13-15].

Muscular system

- The muscles represent 21.7% of the body weight at the age of 6

- Muscular power is better represented in the case of the boys; at the age of 6 muscular power represents only 6% from maximal value which is reached at the age of 25

- Motive development of the child is not uniform, therefore, at the beginning the precise movements are tiring for the child; the capacity of movements coordination increases in time. Movements become more complex and precise after the age of 8-9 [16].

Respiratory system

- Nasal cavities are smaller and narrower than those of the adults

- Respiratory ways increase their permeability gradual

- Breath becomes regular and thoracic

- Respiratory frequency decreases, but the amplitude increases gradually [2]

Circulatory system

- The heart grows slowly in its longitudinal diameter

- Sanguine volume increases from 1.6 l at 7 years to 2 l at the age of 10

- Hemoglobin increases

- Arterial pressure increases to 90 / 50 mm Hg at the age of 7 [1]

Digestive system

- The final dentition replaces gradually the temporary dentition, from the first year of the period and continues along the interval. Premolars and the lower central incisors are changed at the age of 6 and the upper central incisors are changed at the age of 8

Urinary system

- Urinary bladder increases gradually its volume to 500-840 cm³
- -

Neurological - psyche maturation, general characteristics for little pupil

- This stage of development could be named as the beginning of the learning activity which needs a considerable intellectual effort and a great body resistance.

Neurological and mental maturity is characterized by the functional perfecting of the central nervous system; cortical connections are considerably developed, the cortex function is predominant now and ensures the control and the adjustment of the instinctive-emotional subcortical reactions [13].

Attention

- In case of the little pupils, the attention is more involuntary than voluntary, a little distributive and with small flexibility; the little pupil cannot pay attention to more activities at the same time, and the crossing from one activity to another is slow and difficult

- It determines a great energetic consumption, with quickly appearance of the intellectual tiredness [2].

Memory

- It is developed in this period, because it is a period in which pupils are very receptive to accumulation of pieces of information

- At the beginning the memory is passive, later it is voluntary, active and logical.

Observation

- It starts to develop the capacity of finding less clear characteristics, but interesting from the point of view of discovering phenomena.

Thinking

- It is developed and appears the possibility of objects and phenomenon mental manipulation, without deformation

- The operations present a realistic character, the pupil being capable to preserve the quantity, and after the age of 10, the capacity to preserve the weight and the volume appears [17].

Talking

- It suffers important sound perfecting in this period

- If at the beginning, the child has in his vocabulary only 800-1000 words, now at the age of 10, he has 1500-1600 words in his vocabulary [2].

Reading

- The assimilation of reading language is a little more difficult than the assimilation of the talking language and it is best realized after the age of 6. The first stage is the recognition of the written letters, then syllabic reading and then words reading. At the beginning, reading is monotonous, but later it becomes expressive; in this period there can appear some confusion between the letters, syllables or words. These confusions are frequently met in the case of boys [16].

Writing

- It represents a complex activity which is based on the elaboration of some complex motor skills and some functions which present a serious connection between frontal-parietal region and temporo-occipital region of the cortex

- Learning how to write takes 4 years, usually

- The frequent problems of writing are the replace of the letters inside the word, adding

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or missing letters or syllables or esthetical problems [16].

Affectivity

- It suffers deep changes; at the beginning the pupil is restrained in manifestations, but gradually he becomes less timid and capricious and more naughty

- In this period we can talk about a quiet stage in comparison with preschool stage and before puberty stage

- Now feelings like sympathy, satisfaction, shame, correctness are developed; these feelings become stable, lasting and do not oscillate.

- Now the sense of beauty is developed [2].

Senses

- Enlargement of the central and peripherical visual field

- Chromatic differences are better

- The capacity of the control of sound emission increases

- The perception acuity of the parts of the object observed increases

- "Observation" is developed, a complex is based on the development of attention, memory and thinking

- The perceptive acuity towards the components of the perceived object increases [2]

Personality

- The child's personality is now in the middle of its development; according to each child's temperament, teachers must develop their intelligence, special skills, develop of their character

- The self-conscience is developed [2].

In my country:

Stature increase is relative slow and stable in the first part of the period. A sudden intensification with a salt in the increase is realized after this period and before puberty. So, annual rate for higher increase is reduced at the age of 6-9, it is of 5-6 cm /year until the age of 10. The accumulations are realized through the growing of the lower limbs and after that the trunk grows. There are some differences between girls and boys and between the children from towns and villages. Thus, between the age of 6-10, the boys' increase in height is predominant, while girls present an obvious increase in height (bigger than the boys') around the age of 10 - 14. Also, it has been shown that in our country, in the last years there has been a decrease of the period in which girls presented a bigger stature increase than the boys [16].

Weight increase – in Romania the annual rate is an increase by 2-3 kg, between the age of 7-11. The rhythm of the increase in weight is intensive in the first period in case of the girls. The boys are characterized by a clear superior weight to girls'.

Thoracic perimeter – annual rate of increase is by 1.5 -2 cm first and then 3-4 cm. in case of girls, this perimeter is smaller with 1-7 cm than that of boys. Also, we have smaller values in villages than the values found in towns.

The skull perimeter – from the point of view of the growing rhythm, this indicator presents the smallest values. The boys present bigger values at all ages than girls, in all regions; towns or villages. (an exception is only at the moment of birth). The values of the skull perimeter of children are bigger in cities than in villages.

The school timetable of the pupils in primary school (from first year of study to the fourth year of study)

The daily activity of the pupils must be organized taking into account the physiologic and hygienic necessities specific to this period, as long as we know that intellectual activity requires thinking, memory, attention, viewing and hearing, and all of these cause the tiredness of the body even if these activities are realized in hygienic conditions. The work of the pupil causes the strain of their body.

Intellectual activity realized in quick rhythm causes tiredness, but a slow rhythm causes boredom. In case of prolonged activity, some modifications of the nervous system appear. If at the beginning, during the adapting period, attention, memory increase, after one hour and half the maximum point is reached and then the quality of the intellectual work decreases. Also, during the school program, the pupil makes a muscular effort too; in order to have and keep a correct position at the desk, the muscles of the back and the neck are required, for writing the hand muscles, the forearm and arm, and the eyes muscles are required. Muscular effort is more intensive in case of the small pupils; they are tired even if they write only for a few minutes [18].

The body answers to the intellectual effort by an increase of the temperature, in the breathing frequency, cardiac frequency and arterial pressure. In case of a small effort these manifestations are reduced too, but in case of the intensive effort or prolonged effort- for example testes- all these manifestations are amplified.

Intellectual activity and physical activity have a good effect on the development of the body as long as they respect the hygienic rules.

The work capacity of the pupils is modified along the day or week. It has been demonstrated that physiological curve of the work capacity increases after 8 o' clock in the morning, with a maximum point between 9 and 11 for little pupils. Then it decreases between 13 - 14 o'clock, and it is followed by another increase between 15 - 17 o'clock, but without reaching the maximum point from the morning. After 18 o' clock, the curve decreases [2].

During week time, the capacity of work is reduced in the first day, then it increases gradually until Wednesday, and from Thursday it decreases until Saturday, when it reaches the lowest level. To establish the timetable of the small pupil we must respect some rules:

- The effort must be dosed according to the possibilities, particularities and the health of the body

- Alternate of the difficult activities with easier ones

- Rhythmic alternation of activities with resting time
- Gradation of the activity

The time of the day is divided in 3 parts: professional time, biological necessary time and free time. The professional time consists of the time dedicated to school, to homework and the time necessary to get to school and get home from school. The biological necessary time consists of the hours for sleep, the time which is necessary for eating and for individual hygiene. The time left is free time [19].

In case of the small pupils, professional time must not exceed 5-6 hours, out of which 4 hours are for school and the rest of them are for homework.

A great importance for the health of the pupil is the succession- in a certain order and duration, but always the same everyday - of the activity period, the resting period and sleep period. A correct organization of the daily program for pupil requires a strict organization of the main moments and respecting them, - such as the wake up time, the time for homework, the meals time, the time to rest, the sleep time.

School schedule must be organized so that they respect some rules. Difficult subjects such as math must be placed in the pupils' timetable in the moments with maximum efficiency, for example the second or the third hour of the day and on Tuesday or Wednesday during the week. In the beginning and at the end of the week there should be included easy school subjects and maximum 2 difficult subjects. Also, in the first day and in the last day of the week, the number of the lessons must be smaller and on Tuesday and Wednesday it must be higher.

Difficult lessons must be alternated with easy lessons and it must be avoided the placement of 2 consecutive lessons of the same subjects, to avoid the monotony. Sports are tonic, so it must be placed between 2 difficult lessons and not at the beginning or at the end of the day.

The time which is allotted to one lesson must be only 30 minutes. In the first school year, the total number of classes must be 18 -20 a week, and for the next 3 years, 24 classes a week [2].

Homework preparation at home must be done during the period with maximum efficiency, between 15-17 o'clock, and not randomly. It is ideal to begin homework with the difficult lessons. First, it is better to do the writing part of the homework, then the reading part, and finally the learning part. Between the different lessons it is recommended to have a short break, for 10 minutes, but without substituting the intellectual activity which is in relation with school, with another activity such as watching TV [19].

School success

School efficiency is not always in a perfect harmony with the intelligence degree of the child. To obtain maximum school efficiency the school timetable and free time of the child must be in perfect harmony with the development stage of the body. The young organism is very sensitive to the action of the environment conditions. Everything is important for the health of the child and for school success, starting with the air, light, temperature, home cleaning, way of eating, working and resting every day.

A healthy pupil has a big capacity of working, and he is in high spirits and obtains good marks. If the environmental conditions are not good for the pupil's necessities, he becomes sensitive, he falls ill and his development is insufficient or disharmonious and work capacity decreases and determines school failure [19,20].

The main factors which influence the school efficiency

- The age – in case of the small pupils, the capacity of accommodation to the effort is decreased. In time, a better coordination among vital functions which participate to effort is developed, and the learning processes become better.

- Sex – work capacity is different from girls to boys. Girls present a more reduced muscular force than boys, because their muscular mass is reduced and it is substituted by fat tissue. Girls present a capacity reduced to the effort of cardiovascular system, respiratory system, sanguine volume and hemoglobin. Girls have a very good hand dexterity, quick observation. immediate memory and rapidity to write.

- **Physical development** – height and weight influence physical activity in professional schools, where the physical parameters of the children must be in accordance with the height of the desk and with the weight of the equipment [2].

- The type of activity, its intensity and length – because of cardiac solicitation, children cannot adapt to intensive and long effort. Static effort determines a more reduced tiredness than the dynamic effort.

- Health – work capacity of pupil is mainly influenced by the health of the body. So, even in cases of simple colds, there is a physical and intellectual decrease in the work capacity. Chronic illnesses, like joint rheumatism or asthma present negative effects on school efficiency. Alimentation with a deficiency in proteins or vitamins reduces the work capacity of pupils.

- Emotional state – work capacity of the pupils could be reduced in case of some mental states, like sadness, anxiety, fear, force, lack of interest.

- Family climate – affection and understanding inside the family offers the necessary climate for the intellectual work

of the pupil. The reverse of this situation, lack of understanding, too much strictness, unfavorable comparisons, severity – all have

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Correspondence to: Beiuşanu C.

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MEDICINE EVOLUTION IN THE TIMISOARA AREA OF BANAT REGION DURING THE PERIOD BETWEEN THE TWO GREAT WARS

Ciobanu V.^{1,2}, Fira Mladinescu C.^{1,2}, Fira Mladinescu O.^{1,2}

1. The University of Medicine and Pharmacy "Victor Babeş" Timişoara

2. The Center for Preventive Medicine Studies, The University of Medicine and Pharmacy "Victor Babeş" Timişoara

REZUMAT

Lucrarea, fără să fie una istorică urmărește să prezinte aspecte legate de evoluția medicinii în Bantul timișan, legate de evoluția socio-economică, politică și culturală, care șiau pus amprenta aupra acesteia. Sunt prezentate cele mai importante forme de asistență medicală, cu instituțiile aferente, amintindu-se câteva nume de personalități, care și-au adus aportul la dezvoltarea medicinii în Bantul timișan.

Cuvinte cheie: medicina, Banatul timişan, sanatorii, profilaxie, boli infecțioase

ABSTRACT

The present paper, without being a historical paper, aims to present aspects of the medicine evolution in the Timisoara area of Banat region, connected to the socio-economic, political and cultural evolution, which left a mark on the medical life. The main forms of health care are presented, with the related institutions, and a few names of the personalities contributing to the development of medicine in the Banat region are remembered.

Keywords: medicine, Timisoara area of Banat region, sanatorium, prophylaxis, infectious diseases

When we say the medicine was born together with life itself, it's not a new idea, this fact being known and proved for a long time, meanwhile the medicine has a historical evolution determined by the socioeconomic, political and cultural conditions of each society [4].

The medicine in the Timisoara area of Banat region was not an exception.

We, the authors of this paper, not being historians, aimed to detect the most important aspects of medicine evolution, during a specific period of time, the interwar period, when important events happened, with repercussions on the health status of the population of Banat.

In a retrospective glimpse, trough a present day view of things, the sanitary evolution of Timisoara area from Banat region seems simple, maybe too simple sometimes. At a more attentive, objective analyze of the events in a relative short time period, of only 200 years, we must accept, despite all the negative aspects existent, that the achievements are indisputable.

Starting as a war devastated province, with poor and ignorant population, reduced to the inferior limit of an acceptable demographic development, tormented by epidemics, with living in unsanitary population and undeveloped conditions, the Timisoara area of the Banat region, due to measures, not always kind or human, manages to become one of the most flourishing provinces of the Habsburg Empire. The province of Banat became the granary of the Empire, with an important economic weight, and Timisoara, trough its urban equipment, became one of the most attractive province capital, often called "the little Vienna" [4].

All this is also the result of the idea that the health status of a population is not only a necessary factor, but also a compulsory one, being the determinant condition of any social-economic development. Ensuring the population's health is not only about health care, but also about the sanitation of the environment, drinking water supply, rational alimentation, avoiding diseases, schools, education, practicable roads etc. What stood out from the preoccupations of the governors in the last decades, regarding medicine, on purpose or not, was the prophylactic character of their measures. Certainly, this prophylactic character was not by chance, nor was it detached. In the people's interest, this character was the logic and necessary result, as a response to objective situations, present in these territories: frequent and extensive epidemics, massive immigrations, stringent problems of collective hygiene, endangering the social-economic development of the province, and also the interests of the upper classes [1].

At the end of the war, in November 1918, for the region of Banat followed, for almost one year, the Serbian occupation of an important part of the present territory, including Timisoara and Resita, occupation living no pleasant memories for the Romanians. Only in 1919, in August, compliant to the decision of the powerful states comes the peace, the historical region of Banat being divided, 2/3 of its territory to Romania and the rest to Yugoslavia.

Although Banat presented characteristics of real and important welfare, still the sanitary situation was not correlated to the socioeconomic one. The number of hospitals, specially the number of beds was not only insufficient, but also unfitted to the territorial distribution. Many medical specialties existed only in Timisoara, creating difficulties for the population about the addressability and accessibility. often impossible difficulties or verv complicated to overcome. Also, the number of medicines was much under the necessary, and their spreading in the territory was the with agglomeration uneven. in Timisoara, in some towns (Lugoj, Resita, Caransebes, Oravita) or in the rich plain area, while the rest of the territory and specially the rural mountain and hill area, the medical personal being insufficient [4].

As for the health status of the population, this was precarious. The number of births registered a continuous decline, contributing to the aging of the population, while the general mortality and the infantile morbidity presented high rates.

Infectious diseases like: typhoid fever, diphtheria, scarlet fever, measles and whooping cough, presented endemic areas, or epidemic outbursts, the number of the deceased due to these diseases being high. Also the sexually transmitted diseases and tuberculosis ravaged the villages from Banat.
In the year 1918 and in the first half of the year 1919, the city of Timisoara had 7 hospitals with 445 beds, 22 doctors and 48 nurses, which must provide medical care for a population of 60 000 people, without counting the territory around Timisoara [8]. For the rest of the province, the medical care was provided by a modern hospital, for that time, in Lugoj, by the hospitals in Jimbolia, Lipova Caransebes, and Sannicolau Mare, and also by hospitals from Resita and Anina for the territories of the Factories and Resita Domains (the ex S.T.E.G.).

Generally, during the first years of the interwar time, the medical care in Banat was characterized by old state units, unfitted functionally and unable to coop, nor to the necessities, nor to the low financial possibilities of the majority of the population, while for the upper classes it was available a efficient and quality health care, provided by private surgeries and sanatoriums, well cared for and well equipped.

The normal orientation of the politics of the governors in those times would have been in this direction. Unfortunately, the situation had a very different evolution, and the few achievements in Timisoara, like the Bega Hospital and the Infectious Diseases "Dr.V.Babes", represent more the exertion of some doctors devoted to their profession than that of the officials.

On the territory of Banat, in the 20 years between wars, the Ministry of Health constructed two hospitals: one in Oravita and one in Caransebes, and from the funds of the Social Insurance House the hospitals Moldova Noua of Resita and were constructed, also the modern polyclinics from Timisoara and Resita. The Ministry of Health laso allocated funds for the extension and development of the hospitals from Lugoj and Caransebes. In return, in Marilla, near Oravita, a sanatorium with 600 beds was constructed for the patients with

tuberculosis using the funds of the Antituberculosis League and with the support of the railroad administration.

In Timisoara, a series of private sanatoriums were established: the hospital of misericordiens (the black priests) - the present clinic of ophthalmology; The White Cross Sanatorium - the present Pediatric Surgery Clinic; The Dr. Esker sanatorium the present Otorhinolaryngology Clinic; the Sanatorium the present Dr.Freud _ A.S.C.A.R. Clinic; Galetariu Sanatorium the present Oncology Clinic (ex orthopedic clinic); Anaheim Sanatorium - the present students preventorium; Dr. Hacichian Sanatorium - the present Psychiatry Clinic and the Dr.Burian Sanatorium, with a total of 300 beds [4]. In all this period of time, the situation of the state hospitals remained unchanged, the modifications that appeared having little importance.

Thus:

The state hospital (the central hospital) remained in the same old and dysfunctional building, having, in the beginnings, seven wards: internal medicine, surgery, dermatology and sexually transmitted otorhinolaryngology, diseases. urology, ophthalmology and radiology, with a capacity of 300 beds.

Thanks to the unselfish exertions of doctor Cândea Aurel, in the year 1920, on the Babes boulevard, a surgery ward was established. well organized and well equipped, with a capacity of 90 beds and which was known under the name of "Bega Sanatorium". In the year 1929, in the same otorhinolaryngology, building. oncology and radiology wards were established, each managed by a primary physician. This new hospital was managed very competently and honestly by dr. Cândea for 15 years, until his death, in 1935, deeply regretted [6].

The women hospital, from the old building on T.Vladimirescu street, was moved on Galati street, no.4, with 50 beds. The children hospital remained in the same building, in Horatiu plaza, with a capacity of 45 beds.

The second medical institution founded in Timisoara in the period between the two wars, is the Infectious Diseases Hospital "V.Babes". This is also the result of the detached exertions of doctor I. Bontilă, deputy of Timisoara. The hospital begun to function in 1931, with a capacity of 100 beds and under the management of doctor Preda, followed after the retirement, by doctor Hortopan.

Although designed in the same time as the infectious diseases ward, the tuberculoses ward was realized with a delay of more than 10 years, beginning to function in 1942, with a capacity of 120 beds, and with dr. Vintilă Epure as chief of the ward [4].

Another institution. this time with prophylactic character, established in Timisoara in the inter-war period, was the Laboratory, linked Hygiene to the personality of doctor Ioan Telegut. Placed on the Babes boulevard, no.18, at the beginnings in an old building, the laboratory was composed of three wards: bacteriology, chemistry and analyze. His dream was to establish in Timisoara the Pasteur Institute. and the beautiful building on Babes boulevard, no.16, which presently hosts the Hygiene and Public Health Institute, was constructed thanks to the energetic activity and perseverance of the one who was doctor Ioan Telegut [2].

It is not possible to speak about the history of the inter-war medicine in Timisoara, and not to speak about the work of doctor Iosif Nemoianu. Proud citizen of Banat, moved in Timisoara since 1925, he dedicated his entire honesty and love for people, to energetic and multilateral activity, caring for the children, especially those who were abandoned or orphans, and to this purpose, contributing to the reorganizing of the orphanage, which was transformed in modern centre for caring of the children [3].

He carried on a fruitful activity for the progress of medical sciences, leaving a large number of publications on pediatrics, and especially on childcare. His courses for the pediatric nurses formation are important to be mentioned, and also the courses for the instruction of the workers in the ambulance station.

For the first time he gives in Timisoara, in Mehala district, free consultations of childcare, which he tries to generalize, a large number of generations enjoying a modern follow-up of high medical competency.

As for the medical care in the rural area, by establishing in 1923, of the Ministry of Health, we witness the enhancement of its efficiency and quality, because many rural sanitary institutions appear resulting in a higher accessibility. In the same time, in order to ensure a quality medical primary care, in every town in the Banat region, the number of urban sanitary institutions increased [5].

About the medical care for workers and employees, the new law for Social Insurances, according to which different insurance societies unified in one institution, realized a favorable organizing frame for providing qualitative, free of charge and qualified medical care. Meanwhile, the new Insurance Institution manages to develop a network of hospitals, policlinics, surgeries, where the insured members benefit of free medical services in case of illness.

Beside the efforts of the Insurance Institution, for enhancing the medical care for workers and employees in factories, some factories and institutions established their own medical care, where the employees and their families received free medical care. The medical service of U.D.R. (Resita Plants and Domains) [7] must be mentioned, as well as some factories in Timisoara (I.L.S.A., Romitex, Dermata etc.).

Observing the evolution of medicine in Banat, during the inter-war period, we must say that some positive aspects were registered, but not in accordance with the necessities and the possibilities present in Banat. Sometimes, especially in Timisoara, it is possible to talk about a condemnable

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Correspondence to:

Ciobanu Virgil Adress: Bv.Cetății, no.60, sc.B, ap.6, Timișoara, 300353 Email: vciobanu2000@yahoo.fr *Received for publication:08.10.2010, Revised: 10.11.2010* 79

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