


PATIENTS WITH ACUTE MYOCARDIAL INFARCTION ABOUT SMOKING TOBACCO – AS A MODIFIED BEHAVIOURAL RISK FACTOR IN HUMAN HEALTH (BASED ON THE EXAMPLE OF POPULATION OF THE LVIV REGION)

V. Ruden', Doctor of Medicine, Full Professor
Danylo Halytsky Lviv National Medical University, Ukraine

It was established that the interrelation between smoking experience among the investigated persons and the AMI morbidity ($n=174$, $p<0,05$), confirmed by the Pearson correlation coefficient ($r=+0,58$, with $t > 2$) and the regression coefficient ($R=0,45$), showed the 0,45 times higher probability to get the AMI for active tobacco smokers during one year, than for those not consuming tobacco.

Keywords: health, tobacco, smoking, risk factor, myocardial infarction, prevention, doctor, primary level of medical support.

Conference participant,
National championship in scientific analytics

 <http://dx.doi.org/10.18007/gisap:msp.v0i11.1497>

Introduction. Nowadays, according to the WHO, the health status of the population of any country and each individual citizen is adversely affected by the way of life in 50-55% [1]. It is the well-known fact that the most harmful habit in the world is smoking [2]. Consumption of tobacco is recognized as one of the leading causes of health loss and premature mortality of the population [3]. That is typical and disappointingly regular in relation to public health of the population of both economically developed and the developing countries [4,5]. Confirmation of this is the fact that smoking is classified as a disease [F.17] [7] in the International Classification of Diseases (ICD-10) [6]. Statistical data shows that every year about 8 million people die from smoking-related diseases, the part of that number for Ukraine - 0.2 million [8].

For now, 64.5% of adult men smoke in Ukraine, which is 1.4 times more than the European index and 1.6 times more than world indicator [9]. The total number of tobacco consumers in Ukraine is about 9 million active smokers; it is representing one third of the working-age population, while the number of smokers is increasing by not less than 100 thousand inhabitants of the country annually [10].

According to the WHO in Ukraine consumption rate of tobacco smoking reaches 1500-1800 cigarettes per year (4-5 cigarettes per day) for each citizen of the country, that is almost twice as much as the world's average (870 cigarettes per year) [11]. Spread level of smoking among adult population is 38,2%. Ukraine is on the 6th place among

45 countries in the WHO's European region and the 7th in the world after Greece, Nauru, Russian Federation, Austria, Serbia, Bosnia and Herzegovina [12].

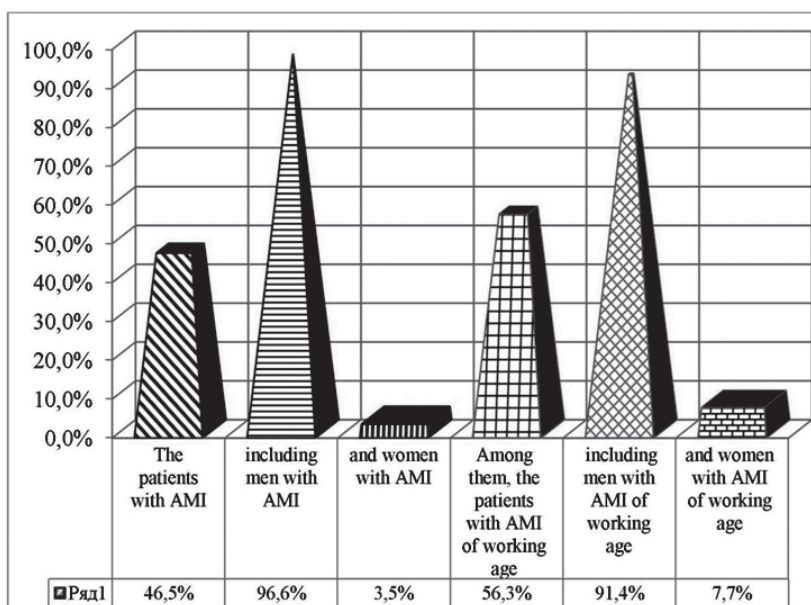
The main point is that tobacco consumption continues to be one of the main causes of premature death from chronic non-infectious diseases. That's why the world health Assembly in May 2013 adopted the resolution WHA66.10 [13], which was approved by the global WHO action plan on non-infectious diseases prevention and control for 2013-2020. This is expected to reduce the prevalence of tobacco use by 30% by 2025, which is one of the main priorities in reducing the number of major non-

infectious diseases in Europe [14], including the struggle against nicotine, aimed at improving people's health.

That's why study of the role of tobacco smoking in the way of life modified as harmful behavioural habit in the context of occurrence of acute myocardial infarction (AMI [I.21]) makes this research relevant in the scientific sense.

Aim of the research. The scientific substantiation of influence of tobacco smoking, as the modified behavioural risk factor in human, on the occurrence/development of acute myocardial infarction [I.21].

Materials and methods. In the course of scientific work the author used

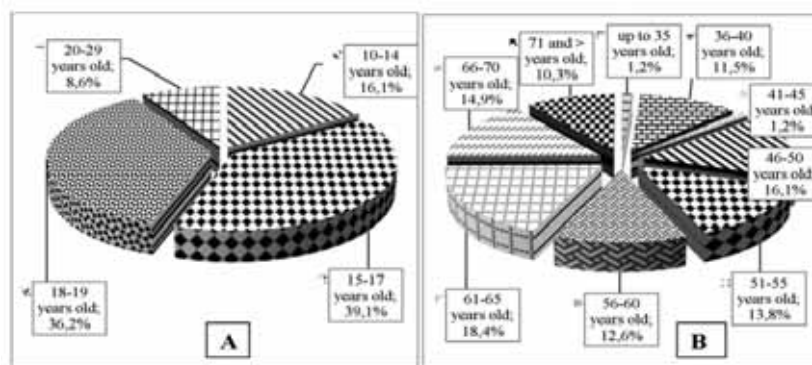


Graph 1. The indexes of specific weight of patients with AMI [I.21] ($n=374$, with $p<0,05$), who actively consume tobacco (%) according to the sex division and working age

the method of “case-control” among the investigated (n=374 patients with AMI ($t>2$, $p<0,05$)) and control (n=374 persons who did not get sick with that disease ($t>2$, $p<0,05$)) groups formed by a number of residents of Lviv region. This allowed revealing the behavioural risk factors according to their negative impact on health state of a person in the context of AMI, including the tobacco smoking. The following methods were used: anamnestic, questioning, medical and statistical, analytical taking into account the principles of systematicity; the obtained data were consolidated and processed on a PC using the programs „Microsoft Office Excel 2010” and „SPSS”.

Results and discussion. Statistical analysis of the obtained data convincingly confirms that 46,5±3,5% (n=174) patients of the total number of examined patients due to AMI [I. 21] (n=374) acknowledge the existence of such behavioural addictions like tobacco smoking (see data of graph 1).

According to the values of OR=3,2,



Graph 2. The data regarding the age of the beginning of the active smoking practice (A) and distribution of smokers by the age (%) (B) among persons from the numbers of patients with AMI (1.21) (n = 174) (p < 0,05)

$p<0.05$ and $DI=2,15-4,35$, it was scientifically substantiated that smokers have 3,2 times higher probability of occurrence/development of AMI as compared to non-smokers. The results of the research indicate tobacco consumption confirmed by 96,6±7,4% (n=168) of males and 3.4±1,4% (n=6) females of the total number of smoking (n=174) patients with AMI, whereas persons of working age in this case

amounted to 56,3±5,7% (n=98). Among males from this cohort this harmful habit was recorded in 91,4±8,9% (n=96) of cases, and among females this behavioural habit was confirmed only in 7,7±1,5% (n=2).

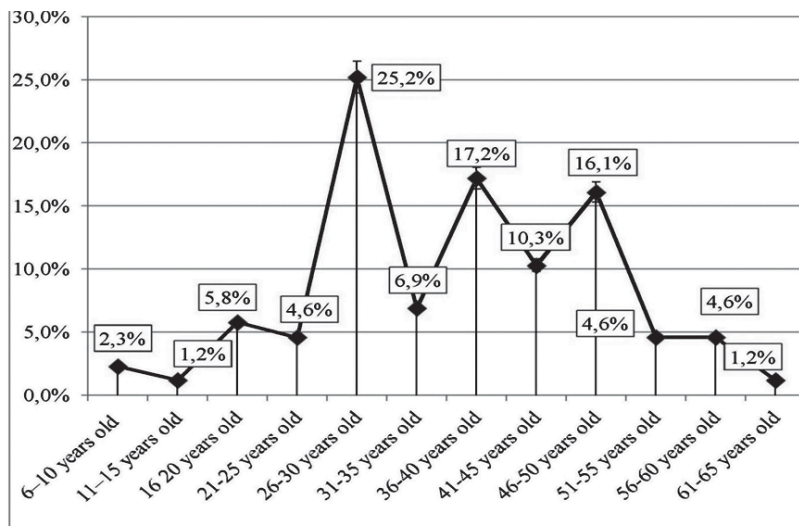
According to the data obtained, it was impossible to establish gender differences in active consumption of tobacco among patients with AMI.

The reasons to start smoking actively

Tab. 1.

REASONS TO START SMOKING TOBACCO ACTIVELY AMONG PATIENTS WITH AMI [I.21]

No.	Patients with AMI [I.21] about their reasons to start smoking tobacco actively	Indexes M+m (%)
1.	2.	3.
2.	The feeling of unity and community with the surrounding: «... Everyone smoked! I did not want to stand out. I'm not a black sheep».	121±26
3.	«The manifestation of maturity, rebellion against parents and in general against social pressure... It's true freedom!!! I am independent from the thoughts of others!»	9,8±2,3
4.	«Wanted to comply with the modern lifestyle, emphasizing own individuality by smoking. It was the rage».	8,6±2,2
5.	Started smoking tobacco «out of curiosity».	8,0±2,1
6.	Referred to the «imitation of adults».	7,5±2,0
7.	Indicated on the «similarity of smoking with strength, courage and independence».	6,3±1,9
8.	Referred to the «new feelings. I want to try everything!»	5,7±1,8
9.	Noted «the inability to relax, to forget and to cope with stress».	5,2±1,7
10.	Reported on a «weak willpower».	5,2±1,7
11.	Could not reject this harmful habit when I just started smoking, and cannot quit smoking now.	4,6±1,6
12.	«A search for the meaning of life and spiritual emptiness «.	4,0±1,5
13.	«An example of parents».	4,0±1,5
14.	«A reason to get acquainted, a way to build joint communication, the basis of friendship».	3,5±1,4
15.	«Nervousness, anxiety».	3,5±1,4
16.	«The way to relax, calm down and rest. I want to forget the problems and relax».	2,9±1,3
17.	«An army service».	2,3±1,1
18.	«Weak willpower».	1,7±0,9
19.	«Failures in personal life».	1,7±0,9
20.	Career: «...to look more confident and respectable «.	1,7±0,9
21.	«An indirect promotion of smoking on television, in films, video».	1,1±0,8
22.	«The leaders» smoked: they gave orders to everybody, they were cool and everyone was afraid of them, everybody wanted to be like them, because no one could deny them».	0,6±0,6
Total		100 %



Graph 3. The indexes of duration (years, %) of tobacco smoking among patients with AMI (n = 174, p<0,05)

among patients with AMI (n=174) are presented in the table 1. It was established that during the development of this bad habit 7,5±2,1% (n=13) did not realize the harmful influence on own health status or didn't admit the full level of it. Whereas, 92,5±7,3% (n=161) of respondents mentioned their disbelief about this phenomenon.

The results of analysis of data regarding the age of starting the regular smoking practice of the examined persons show that on average patients with AMI started smoking at the age of 17±1.3, whereas the maximum number of active tobacco users (60,9±5,9%, p<0.05) observed among the respondents aged from 46 to 65 (Graph 2).

It was proved that the average period

of smoking among patients with AMI (n=174) (Graph 3) is 41.3±3.1 years, whereas 75,9±6.6% of the respondents have great experience in smoking (26-50), 10,3±2,4% - very significant (51 years or more) and only 13.8±2.8% of respondents have medium experience in smoking (6-25 years). Thus, the daily average consumption rate was 21 cigarettes (men smoked $X_{\text{average}} = 31$ cigarettes per day, and women smoked $X_{\text{average}} = 11$ cigarettes in the same period) [15].

In the course of the research author has established the interconnection between the years of smoking and morbidity in patients with AMI (n=174, p<0,05), where the Pearson correlation coefficient ($r = + 0.58$; $t > 2$) indicated the direct correlation

of medium strength between the statistical characteristics.

Using the regression coefficient (R=0.45) it was found that the tendency to the probability of getting sick with AMI is by 0,45 times higher when the duration of smoking is one year as compared to no smoking at all.

It was found that 21±3,2% (n=42) of respondents from the number of patients with AMI (n=200), who did not actively smoke in the course of the research, were also engaged in smoking before, but had overcome their own devastating behavioural phenomenon. The determining point of their choice was: the health status (40,5±9,8%, n=17); advice and requests of family members/relatives/friends (28,6±8,2% n=12); desire not to be "chained" to a pack of cigarettes (11,9±5,3%, n=5); desire to be focused on life without cigarettes (9,5±4,7%, n=4); advice of cardiologist (7,1±4,1%, n=3); life without cigarettes is victory over oneself (2,4±2,4%, n=1) (Graph 4).

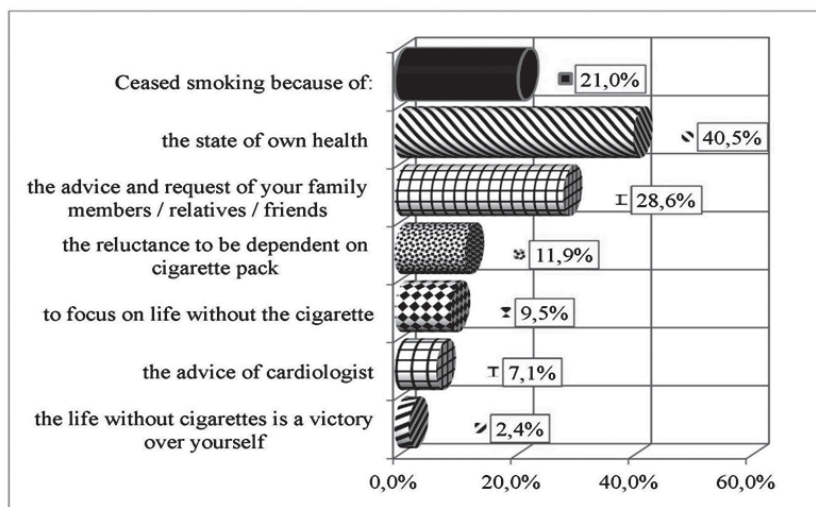
It was proved that almost a third (33,9±4,4%, n=59) of smoking patients with AMI (I.21), who smoked tobacco (n=174), at the time of the study stated that in their lives there had already been unsuccessful attempts to minimize the harmful behavioural effect on health - smoking tobacco through refusal.

It was claimed that 21,8±3,5% (n=38) respondents even having AMI (n=174) did not express any desire to give up smoking, while 36,8±4,6% (n=64) of patients considered that they were not ready to give up smoking, although already had that intention, and 41.4±4,8% (n=72) of respondents declared the intention to stop smoking.

Motives to get rid of the negative behavioural risk factors among the respondents (n=72) are presented in the graph 5.

All patients with AMI (n=174) were invited to answer the question: "Did the doctors actually ask about your harmful habit, and did you get any advice on how to get rid of smoking?" The following results were obtained: local therapists asked 72,4±6,4% (n=126) of respondents about smoking, while advice to get rid of this harmful behavioural habit was given to 62,7±6,6% (n=89) respondents.

The doctors of general medicine/



Graph 4. Patients from the number of patients with AMI (n=42) about causes (%), that prompted them to stop smoking tobacco before the beginning of this disease

family physicians expressed interest in the patient's smoking habit in 85,6±7,0% (n=149) cases, and gave the advice to minimize smoking to 68,4±6,7% (n=102) of respondents. Whereas cardiologists working in polyclinics asked their patients about smoking in 94,2±7,3% (n=164) cases, and the instructions to quit smoking were given to 90,8±7,4% (n=149) of patients.

The patients noted that emergency/ambulance doctors asked 39,1±4,7% (n=68) of respondents about smoking and in 55,9±9,1% (n=38) cases clearly and categorically recommended to quit smoking. In addition, we discovered that cardiologists of specialized hospitals in 93,1±7,3% (n=162) of cases asked about tobacco use on the first day of hospitalization; in the process of treatment in the hospital this question was raised again together with instructions to stop smoking tobacco because of its damage to health in 45,1±5,28% (n=73) of cases.

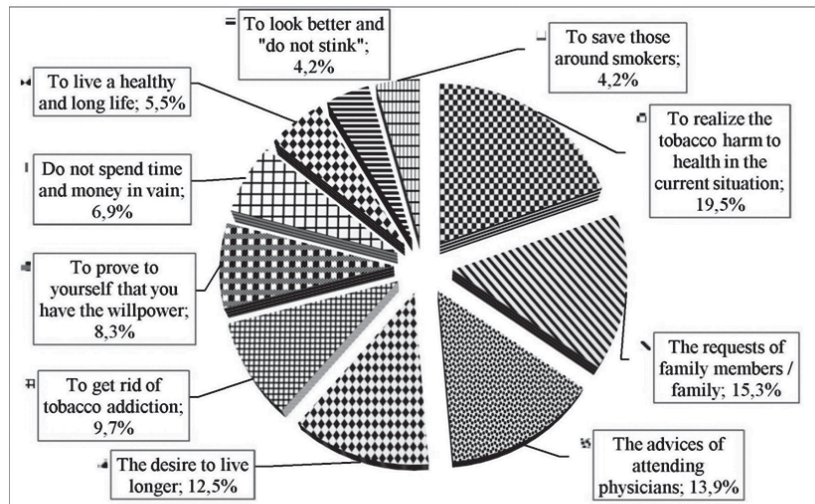
Conclusions.

1) The inclination of a person to smoke tobacco, as a risky behaviour leading to the occurrence/development of AMI, is in 92,5±7,3% cases based on misconceptions about the value of own health, in 33,9±4,4% - low self-esteem, and in 58,6±4,1% - insufficient motivation to change this behaviour.

2) It is proved that smoking as the behavioural risk factor is a behavioural habit harmful for health in the context of possible emergence and development of AMI; this is confirmed by correlation coefficients ($r = \text{"+"} 0,58, t > 2$) and the regression coefficient ($R=0,45$).

3) It is substantiated that tobacco smoking, as a risk factor, is characterized by prolonged and chronic influence (years) of low concentrations of hazardous chemical compounds on the human body; this leads to the probability of eventual occurrence/development of AMI.

4) The essence of preventive measures is in minimizing the risk; the person is sent to doctors of the primary level of care having the strongest contact with the patients, as well as medical specialists from secondary and tertiary levels of health care practice in order to change own ideas about the value of own health and its importance for the quality of life.



Graph 5. The respondents from the number of patients with AMI (n = 72) concerning motives (%) to get rid of negative behavior for own health AMI of working age the risk factor is tobacco smoking

The results of this research would have a positive impact on health and well-being of a human in practical health care through rejection of tobacco smoking. As it was mentioned before, reduction of prevalence of tobacco use by 30% in 15+ age category by 2025 is one of the main 4 priorities of WHO in reducing the number of major non-infectious diseases in Europe, aimed at improving the people's health.

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Information about author:

1. Vasyli' Ruden' – Doctor of Medicine, Full Professor, Lviv National Medical University named after Danylo Galitsky; address: Ukraine, Lviv city; e-mail: vruden@ukr.net

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