ASPECTS OF METABOLIC SYNDROME

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ABSTRACT
METABOLIC SYNDROME IS THE NAME FOR A GROUP OF DISORDERS THAT RAISE A PATIENT'S RISK FOR HEART DISEASE AND OTHER HEALTH PROBLEMS. MOST OF THE DISORDERS ASSOCIATED WITH METABOLIC SYNDROME HAVE NO SYMPTOMS (ALTHOUGH A LARGE WAIST CIRCUMFERENCE IS A VISIBLE SIGN) AND THUS IT CAN BE CONSIDERED A SILENT TRIGGER.
METABOLIC SYNDROME HAS BECOME A MORE COMMON HEALTH PROBLEM DUE TO A RISE IN OBESITY RATES AMONG ADULTS NOWADAYS.
FOR EFFECTIVE PREVENTION AND TREATMENT APPLIED AS EARLY AS POSSIBLE, IT IS VERY IMPORTANT TO IDENTIFY RISK FACTORS AND TO RAISE PATIENT AWARENESS FOR THIS CONDITION, ESPECIALLY BECAUSE A NUMBER OF MEASURES THAT ARE REQUIRED FOR THEM SUCH AS QUITTING SMOKING, ADOPTING A HEALTHY LIFESTYLE WITH A HEALTHY DIET AND INCREASING DAILY ACTIVITY, ARE AVAILABLE TO ANYONE.

KEY WORDS: METABOLIC SYNDROME, RISK FACTORS, SEDENTARISM, SMOKING

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INTRODUCTION

Consumption of food with a high degree of processing and / or high caloric density (foods with high carbohydrate and saturated fat content), the combination of this specific diet with the consumption of alcohol and tobacco as well as with an unhealthy rhythm of life (characterized by lack of physical activity, a marked decrease in rest time, a chaotic meal program, etc.), all of these unfortunately lead to a considerable increase in the risk of developing metabolic syndrome.[8]

The profound metabolic disorders associated with this syndrome is defined as a combination of symptoms that are often cumulative (abdominal obesity, dyslipidemia, low glucose tolerance, arterial hypertension) and may lead to the development of major-impact conditions on health status - cardiovascular diseases and type 2 diabetes.[9]

IDF (International Diabetes Federation) quantifies the parameters and diagnostic criteria for the metabolic syndrome as follows: For a person to be diagnosed with this condition, the mandatory presence of abdominal obesity (measured by abdominal circumference over 94 centimeters in men and 80 centimeters in women) associated with at least two of the following pathological conditions: high blood pressure (over 130/85 mm Hg) or treated HTA, dyslipidemia (triglyceride concentration greater than 150 mg% or, as with HTA, treated dyslipidemia), low serum HDL (lower than 40 mg% in men, respectively less than 50 mg % in women) and elevated blood glucose (more than 100 mg% or the presence of type 2 diabetes in treatment), all correlated with the values of the Body Mass Index (BMI)[10].

In the definition of metabolic syndrome, other parameters (abnormal distribution of body fat, changes in vascular endothelium, pro-inflammatory and prothrombotic status, etc.) can also be associated (according to IDF).

MAIN TEXT

I. THE AIM OF THE STUDY

The purpose of this study was to identify this condition, in accordance with the IDF 2015 parameters of the Metabolic Syndrome, in a number of 156 patients admitted to the Medical Clinic of Railway Clinical Hospital of Craiova; the study was conducted over two years (January 2016-November 2017).

II. MATERIAL AND METHOD

The inclusion of patients in this study was performed by establishing age-based samples (three age groups, respectively 20-40 years, 40-60 years and over 60 years), while pursuing the demographic variables (age, gender, the residence environment) as well as the evaluation of metabolic syndrome by monitoring, during hospital admission, the parameters defined by the International Diabetes Federation in 2015 for establishing this diagnosis.

In order to better study the link between metabolic syndrome and an unhealthy lifestyle, we have taken into consideration (although not defining by IDF in establishing this diagnosis)

[8] Yoo JS, Jeong JI, Park CG, et al. : [Impact of life style characteristics on prevalence risk of metabolic syndrome]. J Korean Acad Nurs, 2009, 39: 594–601.
[9] Wilson PZF, Kannel WB, Silbershatz H, D'Agostino RB. Clustering of metabolic factors and coronary heart disease. *Arch Intern Med.* 1999; 159:1104-1109
[10] International Diabetes Federation – IDF Diabetes Atlas; 6th edn. Brussels, Belgium: International Diabetes Federation, 2013. http://www.idf.org/diabetesatlas

other anamnestic data from the patients observation sheets included in the study: alcohol and tobacco products, disordered meals as well as information on eating habits (high fat consumption).

Since the Railway Clinical Hopsital of Craiova is mostly a hospital for chronic patients, it was found that in the two years of study there were 9 persons who had multiple admissions during the research period.

III. RESULTS

For the first year of study (2016), 84 patients were included in the study for which the observational sheet data allowed the metabolic syndrome assessment. Gender ration (M/F) for the first year of study was 1.54 – with 51 men (60.71%) and 33 women (39.29%). In the second year of study (2017), 72 patients were included, thus, the gender ratio (M/F) was 1,1- with 38 men (52.77%) and 34 women (47.23%) *(Figure 1)*

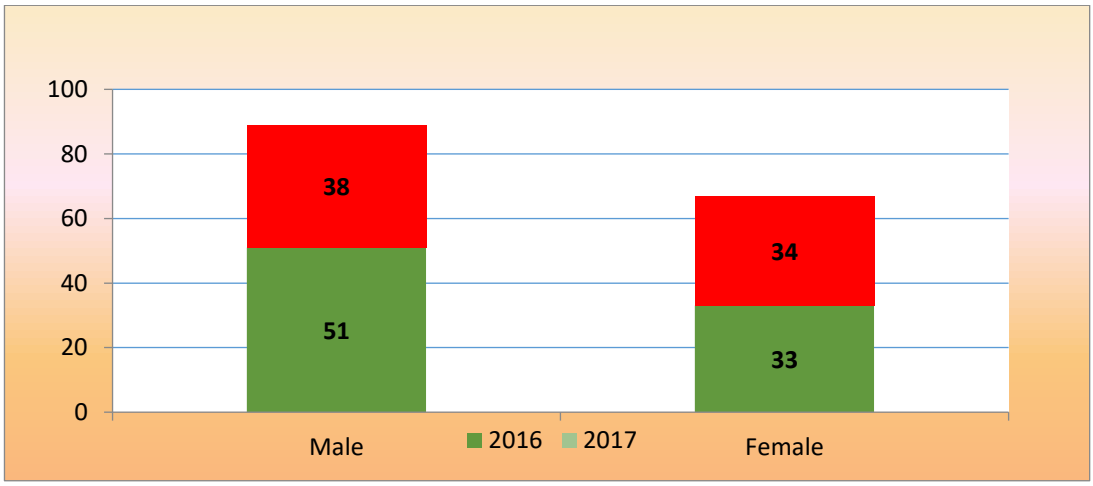

Figure 1. Gender distribution of patients in the study

Because during the study, there were 9 patients (6 women and 3 males) who were admitted in the both years, the studied groups had an overlapping area of 5.77%; these 9 patients were followed during the study and changes in food and lifestyle behavior, in close connection with the potential changes in their metabolic status.

The distribution by resident population of the two studied lots is similar, in correlation with the specificity of the medical unit in which the study was conducted. Thus, we can observe, that in the both studied years, a large proportion of patients came from urban area, in contrast with the patients who came rural areas *(Figure 2).* This fact can be explained by a greater accessibility of patients living in urban areas to medical services.

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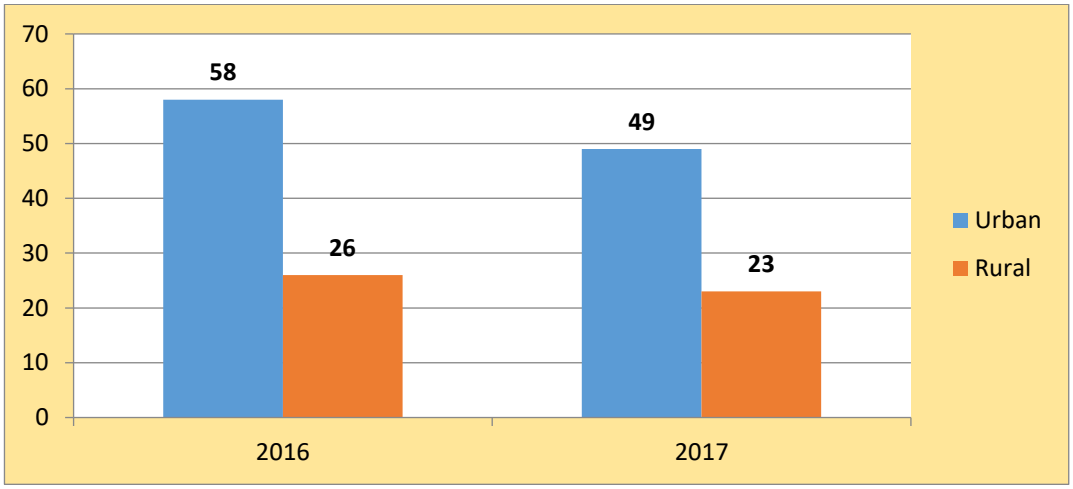

Figure 2. Residence area distribution of patients in the study

Regarding patients distribution according to age groups, we observed that in the both studied years, there was an increased number of patients in the 40-60 year old group. Thus, for 2016 distribution by age group was 32 patients (38.09%) in the 20- 40 years old group, 38 patients (45.23%) between 40-60 years and 14 patients (16.68%) over 60 years old. In 2017 proportions are relatively similar – 21 patients (29.16%) aged between 20 and 40 years, 34 patients (47.22%) between 20-60 years old and 17 patients (23.62%) aged over 60 years *(Figure 3).*

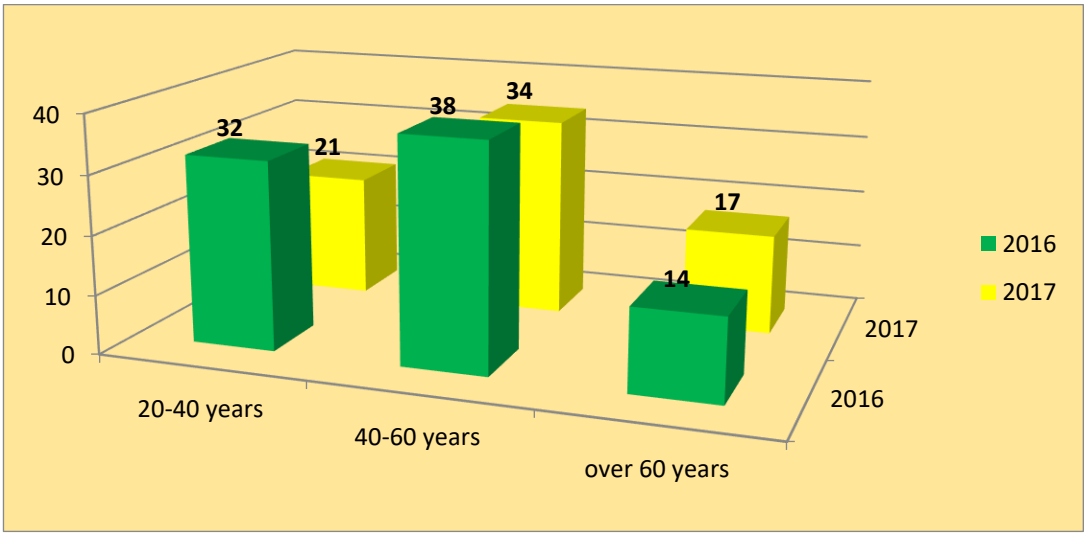

Figure 3. Number of patients by age groups

With regard to the distribution by sex and age groups of the patients under study, we observed a higher prevalence of female patients in both years for 20-40 years old group (18 patients in 2016 and 15 patients in 2017) compared to 14 male patients in 2016 and 6 male patients in 2017

on the same age range) but also the predominance of male patients for the other two age ranges studied. Thus, for the age range of 40-60 years, the sex distribution of patients was the following: 29 male patients for the 2016 and 14 male patients for the 2017 lot; in the case of patients older than 60 years, 8 male patients were included in the study in 2016 and 12 in 2017 *(Figure 4)*.

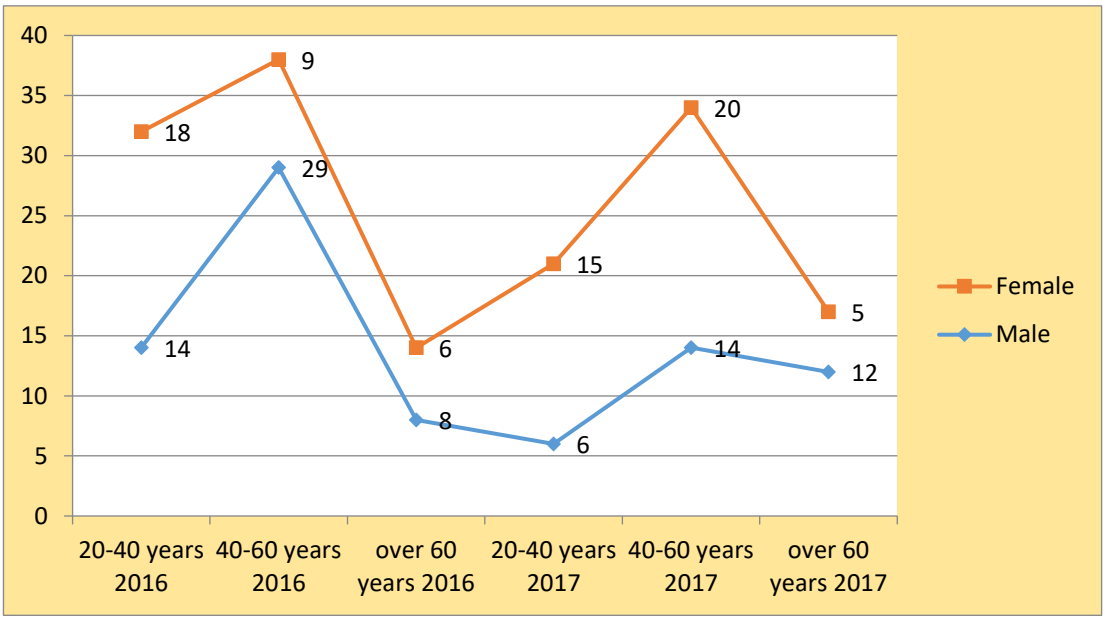

Figure 4. Distribution of patients by age groups and sex

From the detailed observational sheet analysis of these patients, following the diagnostic parameters of the metabolic syndrome as described by the IDF, the diagnosis conditions were found for a total of 29 patients of the 156 (18,58%) patients studied during the two years; to note that out of these 29 patients with metabolic syndrome 3 patients (two males and a woman) totaling 10.34% were hospitalized at Railway Clinical Hospital of Craiova for both years of study and that although they registered variations in the values of the parameters used for the diagnosis of the metabolic syndrome for each of the two admissions, the diagnosis was kept.

Studying the 29 patients diagnosed with metabolic syndrome, we found that the gender ratio (M/F) was 1,41 – with 17 men (58,6%) and 12 women (41,4%) *(Figure 5)*.

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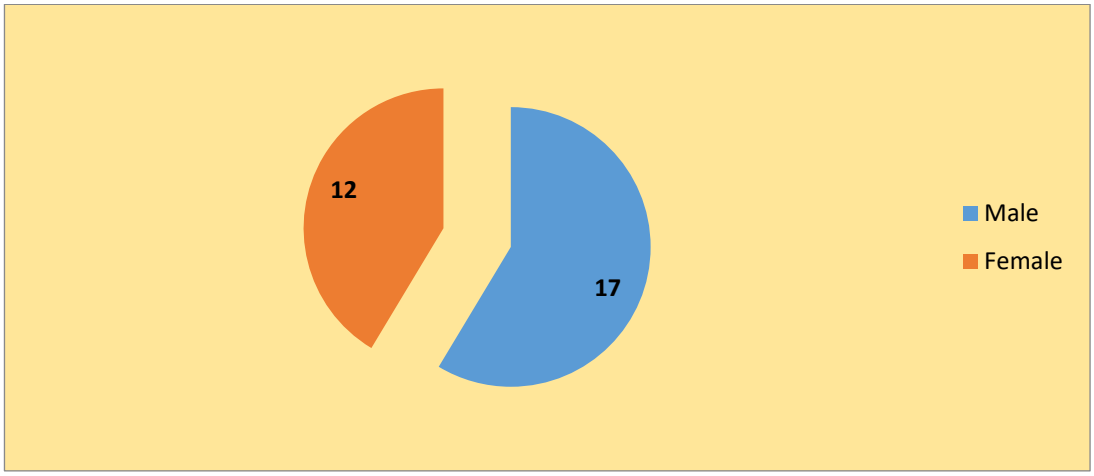

Figure 5. Distribution of patients with metabolic syndrome by sex

The distribution of patients diagnosed with metabolic syndrome according to residence area concluded that 20 patients (68,97%) were form urban areas while 9 patients (31,03%) were from rural areas *(Figure 6)*. This can be explained also explained by the fact that the presence and influence of etiopathogenic factors is higher in urbean areas (fast food consumption, smoking habits, workplace with psychic demand, etc.).

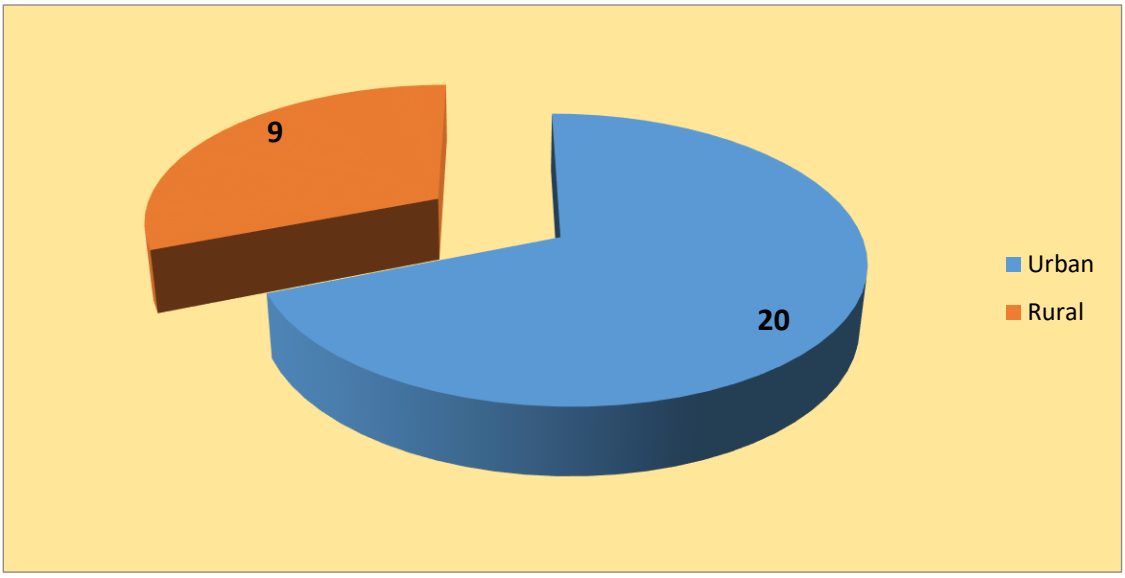

Figure 6. Distribution of patients with metabolic syndrome by residence area

From other anamnestic data collected from the observation sheets, a series of information has been gathered that allowed a lifestyle habits analysis in patients diagnosed with metabolic

syndrome. Thus, regarding alcohol and tobacco consumption, 18 patients (62,06%) declared to use tobbaco products while 11 patients (37,93%) are chronic alcohol consumers *(Figure 7)*.

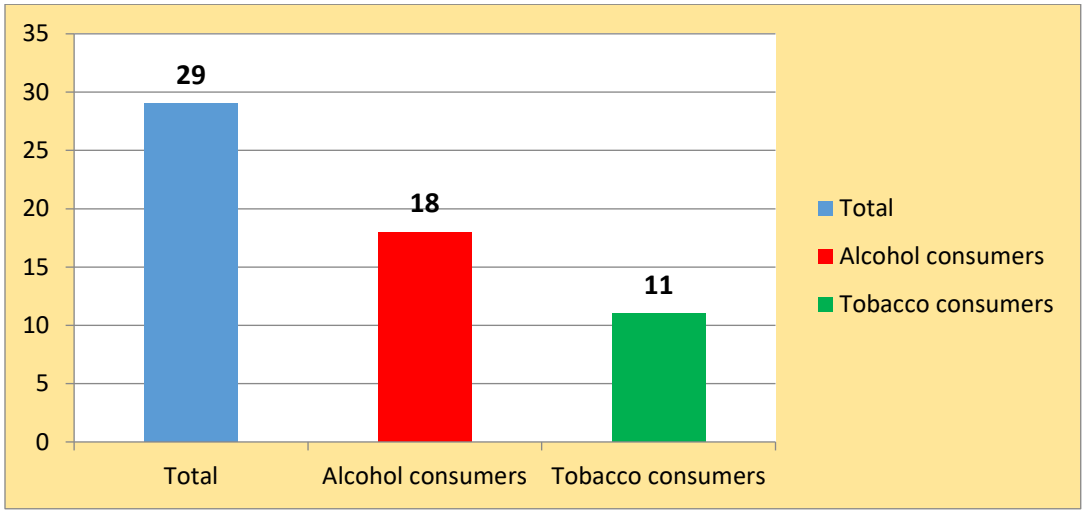

Figure 7. Alcohol and tobacco consumption among metabolic syndrome patients

Unhealthy eating habits – such as high fat consumption or disordered meals – were found in 17 patients (58,62%), while 10 patients (34,48%) declared thay their workplace is one with an intense psychic demand *(Figure 8)*.

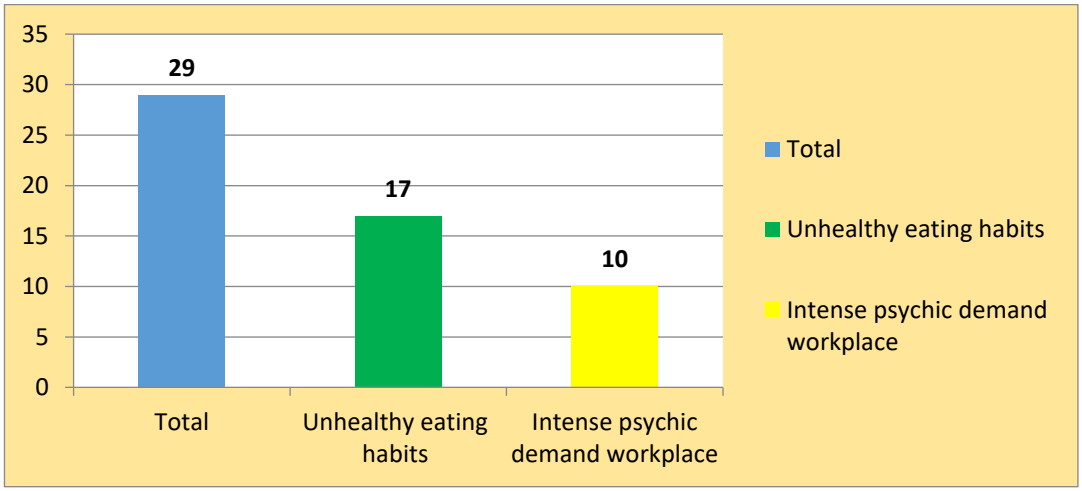

Figure 8. Unhealthy eating habits and psychic demand among metabolic syndrome patients

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IV. CONCLUSIONS AND DISCUTIONS

1. The prevalence of metabolic syndrome for the conducted study was 18,58%, which is similarly to other literature data.
2. The prevalence of metabolic syndrome is not much higher in male patients, this being explained by the fact that the presence and influence of etiopathogenic factors is relatively similar in both sexes.
3. Like other literature data, our study show that lifestyle habits play a fundamental role in the occurence of metabolic syndrome, and one important role in preventing the onset of metabolic syndrome is the adoption of a healthier lifestyle.

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All authors report no pottential conflict of interest.

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