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OBESITY – A SIDE EFFECT OF COVID-19 PANDEMIC

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Abstract

Obesity has emerged as an important risk factor for severe disease during the COVID-19 pandemic. This pandemic strongly influenced the public health policy. The measurements approved to limit the extension of the virus, induced a national lockdown associated with important loss of physical activity. The persistence of the lack of movement (especially outside) determined the increase of obesity prevalence.

Key words: obesity, pandemic, COVID-19, lifestyle

INTRODUCTION

Obesity is a chronic disease that affects people from all over the globe; the current global prevalence of obesity is 39%. The complex pathophysiology of obesity is characterized by excessive hypertrophy and hyperplasia of adipose tissue due a chronic imbalanced energy state (Gammone M.A., D'Orazio N., 2021). Obesity is a major health-care problem, even in middle-income and low-income countries, because of its association with chronic diseases such as diabetes, cardiovascular diseases and some cancers (Santosh Kumar K.Y et al, 2021).

Obesity has emerged as an important risk factor for severe disease during the COVID-19 pandemic; several studies have shown that individuals with COVID-19 and obesity have an increased risk of severe disease, hospitalization, and death. (Mohammad S. et al., 2021)

The findings of a prospective community-based cohort study highlighted that a body-mass index greater than 23 kg/m^2 is associated with increased risks of severe COVID-19 outcomes, particularly in patients younger than 40 years. (Gao M et al., 2021)

This large population-based study corroborated evidence of obesity being a major risk factor associated with adverse outcomes in patients with COVID-19 (Mohammad S. et al., 2021)

It is obvious that obesity has a negative impact on patients infected with SARS-CoV-2, but there might be an effect the other way around.

AIM

The aim of this study is to analyze the effect of COVID-19 pandemic on the incidence of obesity.

MATERIALS AND METHOD

The cohort included a number of 182 patients: 140 women (76.9%) and 42 (23.1%) men. All of them were patients that presented themselves for an endocrinology checkup during the first nine months of 2021.

The patients were consulted, analyzed from anthropometric point of view and subjected to blood tests (including hormones determinations).

RESULTS AND DISCUSSIONS

The COVID-19 pandemic in Romania is part of the ongoing pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The virus was confirmed to have reached Romania on 26 February 2020, when the first case in Gorj County was confirmed. (M.A.I. Report). Today, there are around 1,600,000 cases, 1,400,000 recoveries and 47,700 COVID-19-related deaths.

Given the context generated by the dynamics of the evolution of the epidemiological situation determined by the spread of SARS-CoV-2 coronavirus, the general public interest called for adoption of new measures to enable public authorities to intervene efficiently and with adequate measures for the crisis management. At first, the Romanian government announced a 14-day quarantine for citizens returning from the affected regions.

On 11th of March 2020, the Government published a list of fifteen guidelines regarding the "responsible social behavior in preventing the spread of coronavirus (COVID-19)". The authorities have imposed a ban on sports, scientific, religious, cultural or entertainment events with over 100 participants in closed spaces until 31 March. Likewise, the public activities for museums were suspended until 31 March.

On 16th of March 2020, the Romanian President issued the decree establishing the state of emergency in Romania for a period of 30 days. The schools were closed during the state of emergency and, also, restaurants, hotels, cafes, clubs were closed, followed by gradual closure of borders, or limiting or prohibiting the movement of vehicles or people in/to certain areas.

At the end of March 2020, the first three deaths were reported in Romania. Following a surge in new confirmed cases, the Government instituted a national lockdown: movement outside the home or household is prohibited, with some exceptions (work, buying food or medicine etc.). People over 65 were allowed to leave their homes only between 11 a.m. and

1 p.m. These restrictions limited movement in the open, limited work or losing jobs, reduced interactions (even with the family members) for at least two months during the state of emergency. Even if later on the restrictions were gradually relaxed, the state of emergency had an important impact on society from many points of view, including health.

Each examined patient complained about gaining weight starting in the spring of 2020. They gain between 5 and 20 kg in 12 months. Before that (at the beginning of 2020), based on their declaration, their BMI was between 24.3-29.4 kg/m^2. When measured, all of them were suffering of obesity (BMI $\geq$ 30 kg/m^2) (fig.1). All patient were adults (age between 20 and 55 years old).

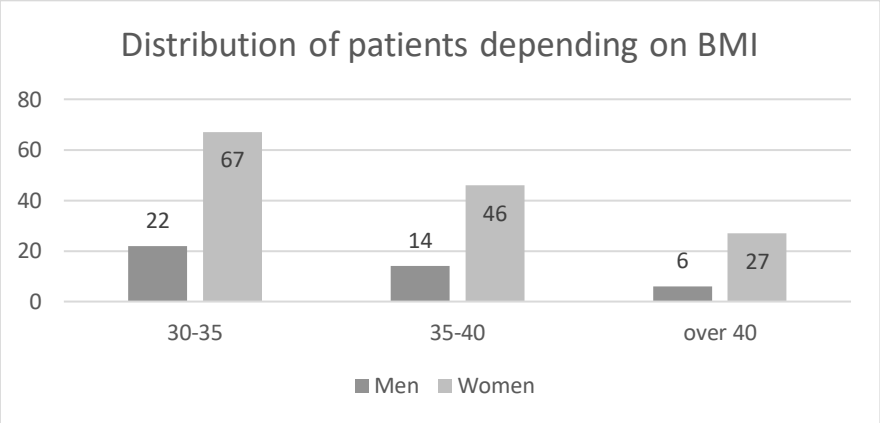

Fig.1. BMI of patients

To exclude secondary obesity causes, blood test were token. All patients integrated in the study had normal hormonal values (TSH, FT4, and Cortisol). From biochemical point of view, 103 of the patients started showing higher glucose values (116 to 138 mg/dl) or mixt dyslipidemia (total cholesterol $\geq$ 200 mg/dl, triglycerides $\geq$ 150 mg/dl). Low glucose tolerance/ diabetes mellitus or dyslipidemia were not presented in the medical history of the patients before 2020.

Evaluating the lifestyle changes that occurred after de spring of 2020, patients admitted: less physical activity, losing their jobs, compensatory eating disorder etc. (fig.2)

The state of emergency in Romania induced a total lockdown and had a major impact on society: people became afraid, sceptic, introverted. Many of them did not get out from their apartments for two months; every activity took place inside their home. This situation led to state of depression, less movement and searching comfort in food.

CONCLUSIONS

The COVID-19 pandemic had a great impact on public health.

If obesity is a risk factor for severe outcomes in patients with COVID-19, in the same time, the COVID-19 pandemic induced obesity as a side effect of the measures taken to limit de extension of SARS-CoV-2 infections.

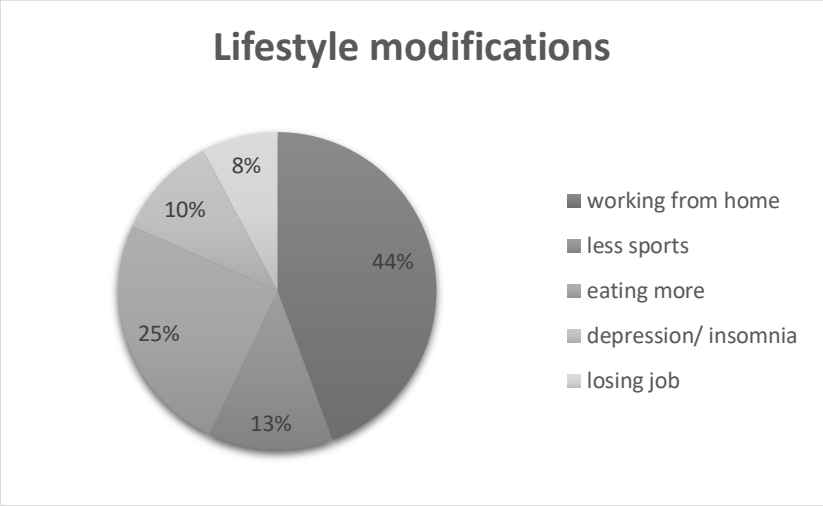

Fig.2. Modifications in lifestyle induce by pandemic measurements

Many of these side effects are now neglected, but they remain and they can influence population health in a chronic way that may persist even longer than the COVID-19 pandemic.

This phenomenon needs a larger study to allow a better evaluation of the impact of measurements induced by COVID-19 pandemic, on public health.

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