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Obesity and COVID-19. A necessary position statement☆

Obesidad y COVID-19. Un posicionamiento necesario

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This position paper has arisen as an initiative of the Sociedad Española de Endocrinología y Nutrición (SEEN) [Spanish Society of Endocrinology and Nutrition], through their Obesity Working Group (GOSEEN), and the Sociedad Española para el Estudio de la Obesidad (SEEDO) [Spanish Society for the Study of Obesity], with the aim of making it known to the general population, and to health authorities, that people with obesity are part of a group at high risk of coronavirus infection and poor prognosis in the progression of the disease, based on scientific evidence. Other entities involved in the care of these patients have adhered to this position: the Sociedad Española de Cirugía de la Obesidad (SECO) [Spanish Society of Obesity Surgery], the Sociedad Española de Medicina Interna (SEMI) [Spanish Society of Internal Medicine], the Sociedad Española de Dietética y Nutrición (SEDYN) [Spanish Society of Dietetics and Nutrition], the Sociedad Española de Médicos de Atención Primaria (SEMERGEN) [Spanish Society of Primary Care Physicians], the Sociedad Española de Medicina Familiar y Comunitaria (semFYC) [Spanish Society of Family and Community Medicine] and the Sociedad Española de Médicos Generales (SEMG) [Spanish Society of General Practitioners].

It is our intention to demonstrate that obese patients belong to a vulnerable group that requires greater emphasis on the prevention of infection, close monitoring in case of infection and caring for their health and psychological needs, and therefore, that they should be considered a priority group in the recently started vaccination campaign.

People with obesity are not only affected by the pandemic due to the fact that they constitute a risk group, but also because of the consequences to their physical and psychological health derived from the mobility restriction measures, the disruptions and delays in healthcare, as with other chronic diseases, and the difficulty of access to bariatric surgery, among others. In this context, the COVID-19 pandemic collides with the obesity pandemic, amplifying the deleterious effects of each of them in a bidirectional way, as will be explained below.

Obesity as a risk factor for worse progression of COVID-19

People with obesity have a 46% higher risk of infection by SARS-CoV-2, compared to people of normal weight. In the event they contract COVID-19, they present twice the risk of requiring hospitalisation. In addition, the risk of severity also increases in people with excess weight, ICU admissions increase by 73% and the need for assisted mechanical ventilation by 69%.[1] It has been proven that worse prior conditions regarding cardiorespiratory training (cardiorespiratory fitness), nutritional status and muscular functional status (sarcopaenia), contribute to a worse evolution of COVID-19.[2]

Unhealthy dietary habits and less physical activity in people with obesity condition a worse immune response and a greater risk of malnutrition and sarcopaenia in the event of coronavirus infection. The chronic inflammatory situation caused by obesity and aggravated by COVID-19 worsens respiratory muscle function and capacity to respond to hypoxia.[3]

If in addition to the situation of sarcopaenia associated with age and obesity we add the conditions derived from COVID-19 infection, such as anorexia, anosmia, dysgeusia, nausea, vomiting and diarrhoea, it facilitates a progressive malnutrition related to the disease. Thus, the unfavourable combination of sarcopaenia and malnutrition is much more common (and easily overlooked) in people with obesity, which undoubtedly contributes to increasing the severity of COVID-19 infection.[4,5] Other conditioning factors associated with obesity, such as the increased risk of thrombosis, poor control of metabolic comorbidities such as diabetes, hypertension or dyslipidaemia, contribute to a worse progression of COVID-19.[6]

Effects of restricted mobility on the health of people with obesity

During the lockdown, between April and May 2020, the combination of a higher food intake and a sedentary lifestyle was the most common rationale for the weight gain that affected almost half of the Spanish population, which ranged between 1 and 3 kg. Among the risk factors associated with the weight gain during the lockdown, female sex, younger age, previous excess weight and having been locked down in southern Spain should be highlighted. Furthermore, living in small apartments, having a lower level of education and low income are associated with a greater probability of gaining weight. A ''halo effect'' was also observed, in that there was

a weight increase in 44.6% of the people around those who had gained weight. After the first few weeks, the purchase of high calorie products such as alcoholic beverages, sweets and snacks increased by more than 50%. Additionally, the lockdown limited access to sports centres and made it difficult to do physical activity outdoors, which together with the lack of routine exercising at home, greatly hindered the ability to maintain an active lifestyle.[7]

Finally, not knowing that obesity is a poor prognostic factor in COVID-19 is also related to having limited knowledge about the harmful health consequences of excess weight. This lack of knowledge is greater in young people under 24 years of age, in those who have gained more than 3 kg and in people with fewer financial resources.

Although children and adolescents are groups at lower risk of developing serious illness from COVID-19, they are affected by the familial, educational and social repercussions of the pandemic that ultimately promote obesity.

Psychological impact of the pandemic on patients with obesity

The association between obesity and mental health disorders is a well-known phenomenon. The prevalence of depression is at least 25% higher among people with obesity, who also have a higher risk of anxiety and eating disorders. There is a two-way relationship between obesity and depression. Therefore, obesity, especially severe obesity, is a predisposing factor for mental illness.[8]

In this context, the outbreak of the COVID-19 pandemic, with particularly harmful effects in people with obesity, has heightened mood disturbances. These disturbances translate into social isolation, stress, sleep deprivation and chronodisruption, sedentary lifestyle and eating disorders, including increased alcohol intake and the appearance of other addictions, all of which are factors that are also implicated in the development of obesity. Fear of infection for oneself and for close relatives over the course of outbreaks has a relevant effect on mental stress. Isolation is especially impactful in elderly people, and even more so if they have dementia, as they feel disconnected from their family environment and from their usual health monitoring, which increases the risk of physical and mental deterioration. The changes in work activity caused by the pandemic increase unemployment and stress, with the consequent increase in the socioeconomic gap that contributes to the obesogenic environment.[9,10]

Impact of delayed access to bariatric surgery on people with obesity

During the current situation arising from COVID-19, many surgical procedures have been suspended, among them, bariatric surgery. In addition to the need to reorganise resources to cope with the pandemic, surgery in patients with COVID-19 presents a high risk of complications. Reorganisation of healthcare services should include planning for bariatric surgery, as delays can have serious or fatal consequences.[11,12] Up to 50% of patients on the bariatric surgery waiting list develop a new complication of obesity and 1.5% die while waiting for the surgery.[13] Furthermore, weight loss and the improvement of complications associated with obesity after bariatric surgery can reduce the risk of severe illness if they contract COVID-19.[14]

Thus, in addition to the need to treat cases of complications from a previous bariatric surgery, it is recommended that priority be given to patients with poor control of comorbidities (diabetes, sleep apnoea, etc.) and to those in whom obesity contraindicates performing another vital treatment, such as a transplant.[12]

In general, a waiting list time of no more than six months should be guaranteed for surgeries for benign pathologies. However, in the case of bariatric surgery, this time is much longer.[15] The restart of bariatric surgery has been relegated to the bottom of the list of elective surgical procedures, indicating inequity, systematic bias and discrimination towards people with obesity.

It is also possible that the drop in health monitoring has also affected patients previously treated with bariatric surgery, who are at high risk of nutritional deficiencies.

Furthermore, the COVID-19 pandemic has led to the cancellation and/or delay of consultations planned for the evaluation and treatment of obesity, both in primary and specialised care. As a consequence, the exposure time to obesity and its metabolic and non-metabolic complications will increase.

People with obesity, a priority group for vaccination against COVID-19

For all the reasons stated above, people with obesity, especially those with higher degrees (BMI $\geq$35 kg/m^2), should be considered a priority group for vaccination against COVID-19.

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Conflicts of interest

The authors declare that they have no conflict of interest related to this publication.

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