

Fragility Fractures: What Changes in the Era of the COVID-19?

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Abstract

The COVID-19 pandemic will continue to have a significant impact on the lives of people who are at risk of osteoporosis. Osteoporotic patients are elderly subjects and affected by various comorbidities, with a generally complex clinical framework. They often occur a fracture after a minor energy trauma with a high rate of disability and mortality. In the emergency phase, there were emerging difficulties and critical issues in reorganizing and guaranteeing the routes to which these patients were accustomed. The aim of our work is to focus attention on the importance of continuity in the management of osteoporosis in the emergency COVID-19 lockdown phase. Awareness that a lot of osteoporotic patients felt neglected or abandoned in this period should motivate medical care to improve the prevention of the fracture and its multidisciplinary management when it occurs. The COVID-19 pandemic has certainly had and will continue to have a significant impact on the management of a chronic condition such as osteoporosis and the social distancing and restrictive measures to mitigate the spread of the virus may further aggravate this condition. Based on these considerations, new strategies should be implemented in the management and treatment of osteoporosis due to social distancing to be able to guarantee continuity of care in prevention of the fractures, surgical treatment, and appropriate health care after discharge.

Keywords: COVID-19 pandemic; Osteoporosis; Fragility fractures; Lockdown

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Introduction

Today osteoporosis represents a real health emergency, being a pathology of prevalence and incidence in constant increase. The epidemiological impact of osteoporosis is impressive: in Italy, about 3.5 million women and 1 million men suffer from osteoporosis [1]. The prevalence of osteoporosis and the consequent fragility fractures increase all over the world in parallel with the aging of the global population. Osteoporotic patients, in fact, are elderly subjects and affected by various comorbidities, with a generally complex clinical picture [2]. This is particularly true in patients with severe osteoporosis, defined as a chronic disease with high mortality and morbidity, characterized by reduced Bone Mineral Density (BMD), T-score value less than -2.5 SD and the presence of one or more fragility fractures [3]. The socio-economic implications of such a widespread disease are naturally very important, as a patient with osteoporosis requires complex care, multi- and interdisciplinary interventions and an individual rehabilitation plan consisting of programs oriented towards

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specific areas of intervention [4]. Fragility fractures may require hospitalization of the patient if a fracture stabilization surgery is required, with a negative impact on the psychological condition of the elderly patient and consequent increase in hospital costs. Planning for correct adherence to medical treatment represents an additional challenge in the management of osteoporosis [5]. It is in this difficult context that the COVID-19 pandemic caused an inevitable interruption in the administration of anti-osteoporotic therapies, favoring the development of more severe clinical pictures mainly in the elderly and in people with pre-existing, respiratory, cardiac or metabolic diseases.

The social lockdown to which the population has been subjected increased the cases of "under-diagnosis" of fragility fractures,

further penalizing patients in terms of organization of treatment and adherence to drug therapies. Fragility fractures, in particular femoral and vertebral fractures, represent a very high risk pathology that requires early and multidisciplinary treatments to reduce the mortality rate, however high. Generally, after a femoral fragility fracture, the correct timing of the surgical treatment is identified no later than 48 hours after admission as the only acceptable threshold value, on pain of an increase in the risk of patient mortality. In the presence of COVID-19, the surgical and anesthesiological risks are amplified. In these cases, in fact, the surgical treatment was delayed, and this further aggravated the patient's clinical picture, also causing damage to the cardio-respiratory level.

Discussion

From a preventive-therapeutic point of view, since patient comorbidities and life expectancy play a key role in the decision-making process of medical therapy, recommendations have been provided also for the delay or temporary transition to other drug therapies [5]. In this regard, patients who are already treated with osteoporosis drugs should continue to receive ongoing therapies, as breaks from therapy for many weeks may decrease the long-term beneficial effect on reducing the risk of fractures. Furthermore, since the inability to correctly take drugs is a fundamental factor in the management of a bedridden patient and in ventilatory therapy, it may be appropriate to think of reorganizing transient anti-osteoporotic therapies on the basis of the easiest method of administration (subcutaneously, via intravenous), with the foresight to remodel the original therapy as soon as the general clinical conditions allow it.

Certainly, in the emergency phase, there were numerous difficulties and critical issues in reorganizing and guaranteeing the paths to which the patients were accustomed. Furthermore, the social distancing measures severely penalized the elderly, who felt neglected or abandoned, and often lacking family support and deprived of direct contact with the general practitioner due to the communication lockdown to which the company was subjected. Being the subjects most at risk, the elderly were isolated, since they could act as healthy carriers for the community and, if they got sick, they would have produced extraordinary pressure on intensive care. Thus, the objective of containing the pandemic resulted in a reset of the territorial assistance services, which confined the most fragile and suffering patients to chronic problems within the walls of the house, also limiting their access to hospitals which, due to the large number of COVID-19 patients allowed hospitalization only in emergencies. A further complication of this physical and social lockdown is represented by the fact that the spacing measures necessary to stem the infections are entailing a high price in terms of short and long-term psychological difficulties. Could we also speak of psychological lockdown? Well yes, even if the

effects of COVID-19 on mental health are still discussed too little. This lockdown period has certainly caused a significant increase in unease, not only material, but also emotional. This is true both for all people already affected to some extent by emotional problems, who insistently seek the reassurance of the doctor and who suffer further from the impossibility of direct contact with him, and for many subjects who in the past had not presented particular problems, but which now live with increasing suffering the condition of prolonging a situation of intense and protracted stress [6].

After all the fears accumulated in these months, what will happen now? Among the main objectives set, there is that of redesigning the care pathways, giving top priority to the certainty of care and dedicated paths of access to health facilities and home care. It would be necessary to pay attention especially to already fractured patients who, to date, for fear of contracting the infection, do not follow adequate care. Pillars of therapy are bisphosphonates, denosumab and teriparatide, always in association with vitamin D, given the high epidemiological impact that hypovitaminosis D has in our country, particularly in the elderly. Indeed, among the recommendations provided, people were advised to maintain adequate serum vitamin D values, as it would appear that patients hospitalized for acute complications by COVID-19 have low levels of vitamin D.

Conclusion

The COVID-19 pandemic has certainly had and will continue to have a significant impact on the lives of people who live and are at risk of osteoporosis. Considering that in recent years only about 20% of patients have received adequate treatment after a femoral fracture, it is inevitable to think that the pandemic may further aggravate this condition, amplifying this treatment gap after fractures that are already unacceptable. Based on these considerations, new strategies should be implemented in the management and treatment of osteoporosis, so as to guarantee not only adequate surgical treatment, but also appropriate health care after discharge, for example, through Fracture Liaison Service (FLS) system equipped with potential clinical and economic efficacy. This would allow providing the necessary health services both to patients with fractures who have not contracted the infection and to patients with fractures and positive for COVID-19, who generally has a complex clinical picture. We also recommend the importance of ensuring adherence to treatment, as well as the implementation of communication with patients and healthcare professionals regarding the importance of anti-osteoporotic treatment, as continuity of care is a fundamental prerequisite for the success of treatment.

Conflict of Interest

The authors have declared that no conflict of interest exists.

References

- 1 Nuti R, Brandi ML, Checchia G, Di Munno O, Dominguez L, et al. (2019) Guidelines for the management of osteoporosis and fragility fractures. *Intern Emerg Med* 14: 85-102.
- 2 Mezzich JE, Salloum IM (2008) Clinical complexity and person-centered integrative diagnosis. *World Psychiatry* 7: 1-2.
- 3 Iolascon G, Tarantino U (2015) Clinical and surgical complexity in severe osteoporosis. *Aging Clin Exp Res* 27: S1-S2.
- 4 Piscitelli P, Feola M, Rao C, Neglia C, Rizzo E, et al. (2019) Incidence and costs of hip fractures in elderly Italian population: First regional-based assessment. *Arch Osteoporos* 14: 81.
- 5 Yu EW, Tsourdi E, Clarke BL, Bauer DC, Drake MT (2020) Osteoporosis management in the era of COVID-19. *J Bone Miner Res* 35: 1009-1013.
- 6 Black DM, Cauley JA, Wagman R, Ensrud K, Fink HA, et al. (2018) The ability of a single BMD and fracture history assessment to predict fracture over 25 years in postmenopausal women: The study of osteoporotic fractures. *J Bone Miner Res* 33: 389-395.