



Joint position statement on management of patient with osteoporosis during COVID-19 contingency from the AMMOM, CONAMEGER, FELAEN, FEMECOG, FEMECOT, and ICAAFYD

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Abstract

Summary Infection by SARS-Cov-2 (COVID-19) has affected practically all the world. This joint position statement of Latin American Medical Societies provides an updated guide for the prevention, diagnosis, and treatment of osteoporotic patients in the face of possible clinical scenarios posed by the COVID-19 health crisis.

Background Infection by SARS-Cov-2 (COVID-19) has affected practically all the world. Characterized by high contagiousness, significant morbidity, and mortality in a segment of those infected, it has overwhelmed health services and forced to redirect resources to the emergency while impacting the attention of acute non-COVID-19 and many chronic conditions.

Objective The objective of this study is to provide an updated guide for the prevention, diagnosis, and treatment of osteoporotic patients in the face of possible clinical scenarios posed by the COVID-19 health crisis.

Methods A task force, of bone specialists with a wide range of disciplines in the field of osteoporosis and fragility fracture, was convened with the representation of several professional associations, namely, the Mexican Association of Bone and Mineral Metabolism (AMMOM), the National College of Geriatric Medicine (CONAMEGER), the Latin American Federation of Endocrinology (FELAEN), the Mexican Federation of Colleges of Obstetrics and Gynecology (FEMECOG), the Mexican Federation of Colleges of Orthopedics and Traumatology (FEMECOT), and the Institute of Applied Sciences for Physical Activity and Sports of the University of Guadalajara (ICAAFYD). Clinical evidence was collated, and an evidence report was rapidly generated and disseminated. After finding the gaps in the available evidence, a consensus opinion of experts was made. The resulting draft was reviewed and modified accordingly, in 4 rounds, by the participants.

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Results The task force approved the initial guidance statements, with moderate and high consensus. These were combined, resulting in the final guidance statements on the (1) evaluation of fracture risk; (2) stratification of risk priorities; (3) indications of bone density scans and lab tests; (4) initiation and continuation of pharmacologic therapy; (5) interruptions of therapy; (6) treatment of patients with incident fracture; (7) physical therapy and fall prevention; and (8) nutritional interventions.

Conclusion These guidance statements are provided to promote optimal care to patients at risk for osteoporosis and fracture, during the current COVID-19 pandemic. However, given the low level of available evidence and the rapidly evolving literature, this guidance is presented as a “living document” and future updates are anticipated.

Keywords Osteoporosis · COVID-19 · SARS-CoV-2 · Fragility fracture · Statement

Introductory notes

A new disease named COVID-19 caused by a novel coronavirus called SARS-CoV-2 has affected millions of persons worldwide.

SARS-CoV-2

In December 2019, a possible coronavirus outbreak was reported in Wuhan, China. The causative virus was initially identified as 2019-nCoV and then officially named SARS-CoV-2 [1]. The disease quickly spread from Asia to Europe, America, and virtually the entire world. The World Health Organization (WHO) formally declared the pandemic COVID-19 by March 11, 2020. And Latin America was declared as the new epicenter of the coronavirus pandemic by June 2020, when most new cases and deaths were in the Americas, and several Latin American countries were among the higher ranks of cumulative cases and deaths by the infection [2].

SARS-CoV-2 is easily transmitted; the estimated basic reproduction number (R_0) ranges from 2.24 to 6.47 [3–5]. COVID-19 clinical features range from asymptomatic or very mild disease to severe cases with elevated mortality. This group of patients requires attention in hospitals, bringing health systems to their limits. Extraordinary measures have been taken to mitigate its transmission, through the implementation of social distancing for long periods and redirecting health resources to focus on the attention of COVID-19 cases.

Healthcare systems have been overwhelmed and have issued general recommendations urging people to avoid hospitals and doctor’s offices unless strictly necessary. These measures represent a challenge to provide continuity of healthcare for other significant public health problems such as chronic degenerative diseases, including osteoporosis and fragility fractures. Some pragmatic adaptations have been proposed for continued delivery of medical attention [6].

Osteoporosis

Osteoporosis is a chronic disease characterized by loss of bone mass and structural deterioration, lessens bone strength, and increases fracture risk. Osteoporosis is a frequent cause of

disability and death [7–9]. Given the chronic nature of osteoporosis, patients require regular evaluation and long-term treatment, especially those who have suffered fragility fractures. Those patients are at a very high risk of suffering one or more new fractures in the following 24 months [10–12], increasing the risk of disability and death [13]. The situation of Latin America and the Caribbean, with a multi-ethnic population above 669 million persons, increasing elderly population; high incidence and prevalence of osteoporosis and fractures, and limited access to diagnostic tools and therapy, has led this condition to be an important personal, social, and economic burden. Guidelines for diagnosis and treatment of osteoporosis exist in many countries, but in many of them, health authorities’ endorsement and adherence are limited. FRAX calculator is available for seven countries, and adaptations to use in neighboring countries are common [14, 15].

It is estimated that due to social distancing measures across the countries, many patients will stop treatment and delay diagnostic studies. At the same time, hospital reconversion, confinement, and postponement of non-urgent medical consultations may put the continuity of medical care at risk, including possible interruptions in the treatment of patients with osteoporosis. Stopping administration of some treatment modalities [16] and discontinuation of secondary fracture prevention services predispose to an increased risk of fracture. Since the epidemic curves of COVID-19 can be “propagated curves” lasting longer than 6 months, mitigation strategies could be prolonged and particularly affect adults 60 years of age and older, in whom the prevalence of osteoporosis and the incidence of fragility fracture are high.

It is essential to establish measures to continue with patients’ care at imminent fracture risk, avoiding further saturation at the hospital emergency services. An analysis of the impact of different epidemiological scenarios on medical care for osteoporosis and fragility fractures should be considered and, consequently, issue recommendations for adjustments in care processes. Those recommendations should address patients continuing their treatment without exposing them to unnecessary risks of contracting COVID-19. It is also necessary to recognize that the burden of COVID-19 in a country can vary significantly between regions, mainly in large

territory countries with marked differences in the social determinants of health among members of the population.

Objective

The objective of this study is to provide an updated guide for the prevention, diagnosis, and treatment of osteoporotic patients in the face of possible clinical scenarios posed by the COVID-19 health crisis.

Methodology

The Mexican Association of Bone and Mineral Metabolism (AMMOM), the National College of Geriatric Medicine (CONAMEGER), the Latin American Federation of Endocrinology (FELAEN), the Mexican Federation of Colleges of Obstetrics and Gynecology (FEMECOG), the Mexican Federation of Colleges of Orthopedics and Traumatology (FEMECOT), and the Institute of Applied Sciences for Physical Activity and Sports of the University of Guadalajara (ICAAFYD) jointed an expert panel of bone specialists with a wide range of disciplines in the field of osteoporosis and fragility fracture (endocrinologists, gynecologists, geriatricians, orthopedic surgeons, rheumatologists, and exercise and nutrition scientists), to focus in establishing an organized response position statement during the COVID-19 contingency. The members of this panel were invited based on their knowledge and expertise in diagnosing and treating osteoporosis and their ability to critically evaluate and analyze the available published information for application in decision-making in a clinical setting.

Before their inclusion in the panel of experts, the summoned members declared their possible conflicts of interest. The majority were free of conflict of interest during the last 2 years. The expert panel members did not receive financial compensation or were informed about the sources of financing before or during the document's analysis or preparation.

The panel of experts evaluated the factors that could negatively affect osteoporotic patients' care during the COVID-19 pandemic, based on the best evidence available at the time of this analysis. Possible adjustments were proposed for standard practice as well as its potential effects on the patient's general health, considering scientific support, relevance, and the feasibility of its application in general clinical practice.

Clinical evidence was collated, and an evidence report was rapidly generated and disseminated. After finding the gaps in the available evidence, a consensus opinion of experts was made. After the first draft was made, an anonymous peer review was made in four rounds. However, given the low level of available evidence and the rapidly evolving literature, the

expert's panel will continue with periodical reviews to update these guidelines.

The guidelines for osteoporosis management in the COVID-19 health crisis of the American Society for Bone and Mineral Research (ASBMR), American Association of Clinical Endocrinologists (AACE), Endocrine Society, European Calcified Tissue Society (ECTS), and the National Osteoporosis Foundation (NOF) [17], as well as the recommendations of the Capture the Fracture initiative of the International Osteoporosis Foundation (CTF-IOF) [18] and the International Society of Clinical Densitometry (ISCD) [19], were included in the reasoning.

Recommendations

Whenever possible, existing current clinical practice guidelines should be observed during COVID-19 contingency. Otherwise, we recommend the following.

Stratify the need for care

During the COVID-19 pandemic, stratify the need for care based on the severity of the clinical situation, the impact of a delay of health interventions on the prognosis and evolution, and the absolute risk of suffering a major fragility fracture in the next 12 months.

Based on these factors, guide the most appropriate behaviors and identify the need for immediate attention and the possibility of postponing some measures or procedure.

We recommend stratifying the need for care at three priority levels:

- Priority A. Patients have a condition that puts the patient's life at imminent risk, is clinically unstable, or where a short delay would significantly alter their prognosis. Those patients require prioritizing immediate care and not deferring attention.
- Priority B. These are clinically stable patients with a very high risk of fracture, in whom study and treatment should not be delayed, given the high morbidity and mortality associated with fractures and the possible need to require hospitalization for an incident fracture, although, if necessary, some interventions could be postponed for 1 to 2 months during the critical period of the pandemic.
- Priority C. These are clinically stable patients, with no recent history of fragility fracture and no clinical suspicion of life-threatening conditions in the short- or medium-term, in whom specific treatments or services can be deferred for some time until sanitary conditions allow, without negatively

affecting the results as long as the patient's clinical conditions remain unchanged. It is essential to consider these factors even if the patient is already under osteoporosis treatment since compliance and duration of therapy may modify the probability of new fragility fractures in a short period (less than 12 months) (Table 1).

Absolute fracture risk assessment

The absolute risk of fragility fracture in patients with osteoporosis can vary widely from a probability of less than one fragility fracture in every 100 patients in 10 years to more than one fracture for every two patients in the next 12 months [10–12].

It is advisable to determine the absolute risk of fracture of each patient, particularly the immediate risk, and assess the factors associated with fracture susceptible to modification, including those extra-osseous factors.

DXA bone scans

DXA bone scans should be considered an elective procedure, and all patients with a recent fragility fracture should be considered being at intermediate or high risk of fracture even without DXA or FRAX assessment.

As DXA services are frequently performed in hospital facilities, and many of those facilities are dedicated to the COVID-19 crisis or emergency management, “elective” radiology may be severely limited. Therefore, it may be necessary to postpone DXA scans when health authorities recommend suspending elective imaging procedures. If a DXA bone scan, vertebral morphometry, or a bilateral full-length femur image (FFI) is required, determine the priority of the need for care. If a priority A or B patient is identified, it is preferable to choose DXA centers geographically located outside of COVID-19 hospitals or laboratory facilities. If it is not possible to perform a DXA scan, it is feasible to stratify the risk of fracture in adults without prior treatment using the Fracture Risk Assessment Tool (FRAX). However, FRAX may underestimate the risk of new fractures in patients with an incident or recent fracture [10, 20]; therefore, patients with a recent fragility fracture should be considered patients at imminent fracture risk [10–12], regardless of FRAX assessment. It is essential to keep a list of patients without DXA to perform it ideally within the next 6 months or once the care services unit restart their activities.

Clinical laboratory

It is necessary for all candidates for the treatment of osteoporosis to determine the etiology, rule out secondary causes, and

Table 1 Need for care priority levels

Priority	Decision-making	Appropriate interventions	Representative case
A	<p>Patient is clinically unstable (OR)</p> <p>Has a condition that puts the patient's life at imminent risk (OR)</p> <p>A short delay would significantly alter the prognosis</p>	<p>It requires prioritizing immediate care and not deferring attention</p>	<p>A 78-year-old patient with an incident hip fracture</p> <p>A 70-year-old patient with an incident clinical vertebral fracture</p> <p>An 82-year-old patient on antiresorptive treatment with evidence of hypocalcemia</p>
B	<p>Patient is clinically stable (AND)</p> <p>Has very high fracture risk^a</p>	<p>Treatment should not be delayed, although if necessary, some interventions could be postponed for 1 to 2 months during the critical period of the pandemic</p>	<p>73-year-old patient with a major osteoporotic fracture during the previous year.</p> <p>A 65-year-old patient with a fracture while on chronic use of glucocorticoids at high doses</p> <p>A 68-year-old patient with several prevalent vertebral fractures on denosumab treatment during the 6 months since the previous denosumab dose</p>
C	<p>The patient is clinically stable (AND)</p> <p>Has risk factors or diagnosed osteoporosis, without recent history of fragility fracture, or other risk factors for imminent fracture</p>	<p>Some specific treatments or services can be deferred for some time until sanitary conditions allow, without negatively affecting the results as long as the patient's clinical conditions remain unchanged</p>	<p>A 65-year-old patient, without previous fracture and a DXA scan acquired during the previous year with low bone mineral density values</p> <p>A 62-year-old osteoporotic patient on bisphosphonates treatment, without previous fracture</p>

^a Consider patients with a recent fragility fracture (e.g., within the past 12 months), fractures while on approved osteoporosis therapy, multiple fractures, fractures while on drugs causing skeletal harm (e.g., long-term glucocorticoids), very low T-score (less than -3.0), or a high risk for falls or history of recent injurious falls

factors that contribute to bone loss, and identify conditions that may contraindicate specific pharmacological therapy.

In candidates who receive a potent antiresorptive such as denosumab or an IV bisphosphonate, and who have never received antiresorptive treatment, it is necessary to measure serum calcium, creatinine, and vitamin D to identify patients at high risk of hypocalcemia; this is particularly important in the presence of impaired kidney function.

According to previous year's laboratory test results (if available), new lab procedures could be delayed in clinically stable patients with normal kidney function.

In patients with clinical conditions associated with hypocalcemia (e.g., hypoparathyroidism, use of loop diuretics, malabsorption), impaired renal function, or clinically unstable, it is necessary to determine serum calcium and vitamin D levels before receiving any pharmacological treatment [21].

During the COVID-19 pandemic, the risk of fracture, the possible etiology of bone loss, and the patient's clinical condition will determine the priority to attend or not a clinical laboratory facility.

If a laboratory test is necessary, explore if home sampling could be an option, or check if the laboratory facility has a recommended schedule and a non-COVID area in order to avoid cross-contamination as much as possible.

Pharmacologic treatment

Patients with osteoporosis should start, continue, or adjust treatment without delay. To date, there is no evidence that any osteoporosis drug affects the risk or susceptibility to contagion of SARS-CoV-2 virus or affects in some way the clinical course of COVID-19. In the case of considering it strictly necessary to postpone a medical intervention due to the pandemic, take into account the prioritization recommended above.

Pharmacologic treatment initiation

Patients with priority A and B need to start treatment immediately, considering their high risk of fracture. For those patients in whom it is not possible to start pharmacological treatment, it is necessary to make a register and determine a strategy to start it as soon as possible.

The choice of appropriate pharmacological therapy should be consistent with the elements of efficacy and safety of the drug, the specific clinical characteristics of each patient, and their preferences when possible.

Osteoporosis medications approved for use in Latin-American countries include denosumab, zoledronate, alendronate, risedronate, ibandronate, raloxifene, bazedoxifene, tibolone, and teriparatide. They have no contraindications associated with COVID-19. However, it is convenient to keep in mind the following considerations:

The use of zoledronate and denosumab may require a visit to the doctor for its application. Intravenous bisphosphonates occasionally produce moderate to severe inflammatory reactions [22–24] that may require medical observation and could be confused with COVID-19 symptoms. Therefore, in areas with a high COVID-19 burden and limited availability of diagnostic tests, it may be appropriate to consider other therapies, particularly in naive patients, in whom the inflammatory reactions associated with bisphosphonates are more common and intense. This concern about the acute reaction with IV bisphosphonates has to be balanced with both the convenience and the possible logistical problem of an IV dose and the strong advantage of long-lasting effectiveness without frequent return for another dose [25].

Selective estrogen receptor modulators (SERMS) are associated with a slight risk of thromboembolic events [26–29]. As some cases of COVID-19 have a hypercoagulability component [30], it is convenient to evaluate the risk-benefit relationship carefully.

All osteoporosis treatment patients should receive an adequate supply of 1200 mg of calcium and 1500–2000 IU of vitamin D daily. Patients at risk for D deficiency (e.g., obese, impaired kidney function) may require a personalized vitamin D dose, ideally according to laboratory results when available [31, 32].

It should be considered that some services and supplies, such as specialized drug parcel services, medications, and supplements, may have limited availability during the pandemic.

Treatment continuity and temporary interruption of pharmacologic treatment

All patients at high risk for fragility fracture and those with prior hip or vertebral fracture should continue treatment without interruption. “Drug holiday” is not recommended, especially in patients with several fracture risk factors, because anti-fracture efficacy is not maintained. They could increase the risk of new vertebral and non-vertebral fragility fractures [16, 33].

During the phases of increased transmission of SARS-CoV-2 disease, it is likely that there are some significant limitations to administering or taking medications for osteoporosis. Access to parenteral drug dosing centers may be limited, or there may be disruptions in some supply chains.

For most patients, the interruption of 1–3 months in the pharmacological treatment of osteoporosis may not imply significant risks, except for those receiving denosumab, as patients who discontinue its administration show a rapid rebound of bone remodeling markers and a decrease in BMD

[34, 35], and vertebral fractures have been reported to occur as early as the seventh month after the last denosumab injection, particularly in patients with previous fractures [36, 37]. Therefore, in patients receiving denosumab treatment, a new dose should be guaranteed within 4 weeks after the end of the 6-month period after its last dose [21, 38]. If arrangements for the next dose of denosumab cannot be made, consider switching to a bisphosphonate.

In patients under teriparatide regimens who have difficulty continuing their treatment, it is possible that 3 months without daily application does not significantly affect their evolution and prognosis, since no rebound effect has been observed when stopping teriparatide application, and the pivotal study suggests that some anti-fracture effect persists for 18 months after stopping treatment [39, 40]. Additionally, the gain in BMD achieved with intermittent regimens of 3 months of application, alternated with three free months for 4 years, is similar to that obtained with the standard approved daily application of teriparatide in 2 years [41, 42]. However, intermittent application should not be considered a recommendation, and a prolonged interruption of treatment should be avoided since it may entail a progressive decrease in BMD and a possible increase in fracture risk. Therefore, in patients who cannot continue teriparatide therapy, and in those who completed 18 or 24 months on teriparatide, sequential therapy is recommended either with denosumab or bisphosphonates [21, 38].

In the case of oral bisphosphonates, and perhaps IV ibandronate, a delay up to 6 months does not seem to affect the patient's evolution significantly [16, 43]. However, stopping treatment for more than 3 months on any osteoporosis medication is not recommended. A possible exception is IV zoledronate since data from the extension to the HORIZON PFT study indicate that although persistence with annual dosing between years 3 and 6 results in fewer vertebral fractures than does drug discontinuation at year 3, fracture rates remain much lower in the discontinuation group than in the original placebo group [44]. While those patients at high risk for vertebral fracture, including those with recent incident morphometric vertebral fracture and/or hip BMD T-score ≤ -2.5 , will benefit most from continuing of osteoporosis therapy, consider selecting medical facilities different and geographically distant to hospitals, applying the drug at home, drive-through application modules, delivering the medications and self-application at home, and temporary or definitive substitution of a parenteral drug for oral medications.

Clinicians must consider that the temporary or definitive substitution of a parenteral drug for oral drugs requires ascertainment that there is no contraindication (e.g., esophagitis or renal deterioration associated with bisphosphonates).

It is necessary to recognize that self-application may need training and monitoring. For that purpose, we can take advantage of available technological resources, such as video training.

Management of osteoporosis in the patient with incident fragility fracture

Despite confinement, and the relative decline in mobility, during the COVID-19 pandemic, the incidence of hip fracture has not decreased [45], and it is still among the leading causes of care in emergency services.

Due to the saturation of medical services and hospital re-conversion, several fracture liaison services (FLS) have been disrupted, compromising secondary fracture prevention. Since patients with incident fragility fractures have a very high risk of a new fracture during the first year following the fracture [46], detection and management of osteoporosis, including rehabilitation and fall prevention, are essential parts of treatment that should not be overlooked [47, 48]. In these patients, when a DXA bone scan is not possible, the diagnosis of osteoporosis can be preliminarily made based on clinical and radiographic findings [18], so that DXA scan can be postponed until epidemiological conditions allow it or requested in an out-of-hospital DXA center. Laboratory tests should be performed before starting osteoporosis medication [49]. Calcium and vitamin D supplementation must be prescribed before hospital discharge [47, 50]. It is also advisable to make the appropriate arrangements to reduce the hospital stay and transfers within the hospital for patients and staff, to reduce cross-contamination risk.

When it is not feasible to complete the clinical and laboratory evaluation or start treatment during the hospitalization, for the fractured patient, it is necessary to complete the study protocol and start treatment later. In that case, telemedicine can be useful [48, 51].

In hospitalized COVID-19 positive patients, special care should be taken when prescribing antiresorptive treatment, as it could worsen the hypocalcemia that has been associated with COVID-19 infection [52–54]. It could be considered either to defer the treatment initiation or to stop it temporarily during hospitalization.

Patients with suspected or confirmed coronavirus disease (COVID-19)

Subjects with suspected or confirmed COVID-19 should be treated according to their care priority. However, we recommend that the osteoporosis diagnostic approach and treatment be deferred until the SARS-CoV-2 infection has been ruled out, or the patient has been fully recovered.

In the event of an incident fragility fracture, the patient must receive trauma care, following strict personal protection measures.

In patients in osteoporosis treatment who are infected by SARS-CoV-2, it is possible to discontinue the osteoporosis drugs during several weeks until complete recovery from COVID-19, particularly in those with moderate to severe disease-

Physical activity, exercise, and nutrition

Regular physical activity and good nutrition are important components of osteoporosis management and should be continued during COVID-19.

Physical activity and exercise

Because some precautionary measures for COVID-19 may affect the amount of physical activity that patients perform, patients and caregivers must pay special attention to physical activity and the time spent by patients sitting or reclining [55] since rapid bone and muscular detriment on mass and function are associated with unloading bone and muscle [56], and inactivity is associated not only with the loss of bone and muscle but a decrease in motor skills. It is strongly recommended that patients engage in a regular physical activity plan and avoid sedentary behaviors. Patients should be as physically active as their abilities and conditions allow, breaking up sedentary time [57].

It is recommended that the exercise program for osteoporosis patients be designed and supervised by a clinical exercise expert. Those programs should consider specific exercises for static and dynamic balance, motor coordination, proprioception, and muscular strength [58]. A correct body posture during the execution of exercise routines, and activities at home reduces fracture risk, so it is essential to prioritize the postural training [59].

In those patients who already had an exercise program, it is necessary to adjust it to the available resources in confinement. If close supervision is not possible, clinical exercise programs should be adjusted based on patient safety, and telerehabilitation may play a role in some instances.

Calcium and vitamin D

During confinement, eating habits can vary significantly and affect the intake of certain essential nutrients. Therefore, it is advisable to guarantee a daily calcium intake of 1000 to 1500 mg [60], preferably through the diet, mainly from fermented dairy (like yogurt) and cheese, as their consumption, beyond calcium and vitamin D content, is associated with a lower risk of fractures [61–64]. Subjects with insufficient calcium intake or who do not include dairy products in the diet, or those in treatment with an antiresorptive agent, should receive a calcium supplement [62].

Since low serum calcidiol levels are common worldwide, including Latin American countries [65–67], and self-confinement probably decreases sun exposure, a vitamin D dose of 1500 to 2000 IU/day is recommended to reach or maintain adequate serum calcidiol levels, even without a recent determination of vitamin D levels [21, 31, 68]. However,

if a marked vitamin D deficiency is observed (≤ 20 ng/mL), a higher supplementation pattern may apply [69].

During lockdown, consuming vitamin D-rich foods (like high-fat fish, red meat, and egg yolks) and fortified ones is highly advised, due to their overall nutrient contribution [70–72]. Similarly, sufficient and safe sun exposure should be advised when possible, for instance, 5 to 15 min of sun exposure (arms and legs uncovered) between 10 am and 3 pm.[73].

Protein

Due to self-confinement, the decreased physical activity might lead to a reduced anabolic sensitivity to protein intake [74]. Older adults should consume 1.0 to 1.2 g of protein, per kg of body weight, per day [61–63, 75–80], following an evenly distributed pattern [81]. Each meal should contain at least 30 g of protein or the equivalent to 0.4 g protein/kg [82–85], and most of the protein should come from animal sources, because of their availability and essential amino acid profile (including leucine) [86, 87].

The patient and family members should be committed to nutritional surveillance to identify changes in weight or eating behaviors that could be considered risky and may harm bone mass, body composition, and functional capacity and increase the risk of falls. If nutritional risk factors or lack of compliance are detected, it is advisable to request the nutrition professional's assessment, which could be through the tele-nutrition modality. This form of remote care aims to provide nutritional care to patients in contexts in which, for security reasons, they cannot go to receive in-person consultation [88].

Conclusion

Infection by SARS-Cov-2 (COVID-19) keeps rising worldwide, and mitigation measures are expected to continue for several more months. Healthcare systems will likely be affected for a long time. Consequently, an organized response for delivering medical attention to the patients at risk of fragility fracture is necessary. This joint position of Mexican and Latin American Medical Societies provides an updated guide for the prevention, diagnosis, and treatment of osteoporotic patients in the face of possible clinical scenarios posed by the COVID-19 crisis.

We recommend that whenever possible, existing osteoporosis guidelines should be observed during COVID-19 contingency. Otherwise, stratify the need for care at three priority levels based on patient absolute fracture risk and clinical stability. Therefore, patients with intermediate and high fracture risk must receive immediate attention, although in some epidemic scenarios, selected laboratory tests and intervention could be delayed 1 or 2 months with relatively low risk of

complications. Patients with an incident fragility fracture are at imminent risk of a new fracture and must receive treatment even without a DXA scan.

Osteoporosis pharmacologic treatment must be based on safety and efficacy. Although there is no evidence that any osteoporosis drug affects the risk or susceptibility for the contagion of SARS-CoV-2 virus or affects the clinical course of COVID-19, some specific observations are made to aid clinicians to select the optimal treatment for each patient.

Finally, we hope that this guideline is useful in a wide variety of possible Latin America scenarios. We recognize we are learning more about COVID-19, and an update of these guides may be necessary.

Disclaimer

Disruption of health services caused by the COVID-19 pandemic, the urgency of having adequate recommendations in the care of patients at high risk of fracture, and the low level of evidence available on multiple aspects of the behavior of the SARS-CoV-2 imply that most of the recommendations are based on levels of evidence III and IV and expert opinions. Since information may undergo changes in the coming months with the advent of new knowledge, the experts continue to meet and evaluate new information to update the recommendations if necessary.

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Endorsements This consensus report is endorsed by the following societies:

Mexican Association of Bone and Mineral Metabolism (AMMOM)
National College of Geriatric Medicine (CONAMEGER)
Latin American Federation of Endocrinology (FELAEN)
Mexican Federation of Colleges of Obstetrics and Gynecology (FEMECONG)
Mexican Federation of Colleges of Orthopedics and Traumatology (FEMECONOT)
Institute of Sciences Applied for Physical Activity and Sports of the University of Guadalajara (ICAAFYD)

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Compliance with ethical standards

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