



BILATERAL PNEUMONIA AND COVID-19 RESPIRATORY DISTRESS SYNDROME IN A NONAGENARY PATIENT.

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ABSTRACT

The appearance of epidemics is not something new in the history of humanity, but in recent years we have been witnessing epidemic outbreaks, many of them due to viruses, causing social alarm. The reasons why these outbreaks have more impact, are human reasons and derive from our way of life (living in large cities, more trips for leisure or business, commercial exchanges) and from the hyper information that exists where the large mass media, formal or informal, keep us updated minute by minute of the development of any event of global impact. ¹ A pandemic in the context of an aging society is currently the reality that is lived. The COVID-19 virus causes diverse clinical manifestations that include respiratory symptoms, from the common cold to severe pneumonia with respiratory distress syndrome (ARDS), septic shock, and multiple organ failure. The elderly population has a greater susceptibility to infection and to the more serious forms of it. The present case tries to contribute a practical vision on the peculiarities of the infection by COVID-19, in this population group in general, exposing a clinical case of a nonagenarian patient. ² **Objective:** Exposing how Covid-19 in a nonagenarian patient develops ARDS. **Method:** This is a systematic review of bilateral pneumonia and respiratory distress syndrome by COVID-19 in a nonagenarian patient, emphasizing its clinical characteristics and short-term complications. The information and images obtained belong to the medical personnel in charge of the case whose reinforcements rest on the statistical package Excel, Word and JPG. **Conclusion:** ARDS is an important complication in severe disease that can occur in 20% of patients with COVID-19 infection. Non-invasive mechanical ventilation is a valid therapeutic option also in the elderly patient. Thus, the early approach and follow-up of fragile infected patients could improve their survival.

KEYWORDS : Pneumonia, Covid-19, ARDS, older adult.

INTRODUCTION

The Orthocoronaviridae, commonly known as the coronavirus, is one of the two Coronaviridae subfamilies that includes phylogenetically similar single-stranded RNA virus genogroups with a helical nucleocapsid and corona-shaped tips on the surface of the virus from which this virus family gets its name. ³

To date, thirty-nine species of coronaviruses have been recorded. Several species are of recent investigation, since they had not been previously identified in humans and there is little information about transmission, severity and clinical impact on them. There are 4 genera of coronavirus: Alphacoronavirus: formerly known as Coronavirus group 1 (CoV-1) with 12 subgenres and 17 species. Betacoronavirus: formerly known as Coronavirus group 2 (CoV-2) with 5 subgenres and 11 species. Deltacoronavirus: with 4 subgenres and 7 species and Gamma coronavirus: with 2 subgenres and 2 species. The genera Alphacoronavirus and Betacoronavirus have bats as hosts. ⁴

Some coronaviruses only affect animals, but others can also

affect humans, originating from a common cold, to more serious diseases such as severe acute respiratory syndrome (SARS) or respiratory syndrome in the Middle East. The entry of coronaviruses into respiratory epithelial cells occurs by contact of the viral capsid spicule with its receptors on the target cell, allowing virions to enter the cytoplasm by an endocytosis process. ⁵

The elderly due to their age, as well as presenting comorbidities, is a vulnerable population for the development of severe and fatal forms of acute respiratory infections in general and of COVID-19 in particular. The situation that occurs in nursing homes is different from what happens in other health institutions and presents specific risks. There are factors of their own that may appear due to the evolutionary moment of people, such as the aging process and the decrease in functional reserve, which makes it difficult to fight diseases, in addition to manifesting reduced abilities to move, communication difficulties and changes in perception. characteristic of the body, all these characteristics, the presence of common spaces is associated with the continuous transit of health workers, family members, caregivers,

coexistence with people with different degrees of fragility.⁶

The clinical presentation of COVID-19 is variable. In the most severe cases, COVID-19 can cause pneumonia, which can be complicated by ARDS and distributional, cardiogenic, or mixed shock. The elderly and / or population with medical comorbidities and geriatric syndromes is the most vulnerable. This fact can be influenced by both the physiological aging process and, especially, the decrease in the functional reserve that makes it difficult to fight against diseases and infections.⁷

The most frequent symptom is fever (83-98% of cases); however, although there are no data on the clinical profile by age, we know that elderly patients frequently do not present fever (or of less intensity) even in severe infections, which can clearly be a confounding factor in the diagnosis of this population. . Therefore, the suspicion threshold for these patients should be lower and not exclude the diagnosis due to the absence of fever.⁸

The next clinical manifestation in frequency is cough (60-80% of cases), more frequently irritative, non-productive cough. Another series of respiratory symptoms may appear, such as dyspnea (around 30%), and less frequently sore throat and runny nose. The most severe respiratory involvement consists of the development of pneumonia that in 75% of cases is bilateral and that in up to 17% of cases is complicated by acute respiratory distress syndrome (ARDS) according to the initial series. To date, there is no detailed analysis of the symptoms according to age, but it is expected that, as in other pathologies, elderly patients frequently present with atypical or more nonspecific clinical symptoms.⁹

For all the aforementioned, we present the case of an older adult patient, with multiple, controlled comorbidities, who goes to a specialized hospital with a clinical picture suggestive of COVID-19, subsequently confirmed by extension tests. Who was given treatment to improve their ARDS based on BIPAP and thus improve basal saturations.

CASE PRESENTATION

This is a 90-year-old male patient born and residing in Quito, Pichincha province, Ecuador; by profession a professional retired driver, has a history of high blood pressure, chronic kidney disease. His usual treatment: enalapril / hydrochlorothiazide /; without cognitive decline. He went to a specialized hospital with a 9-day clinical picture of worsening general condition, with dyspnea of moderate exertion, cough with yellowish expectoration in a moderate amount. On physical examination: TA: 130 / 80mmHg, Temperature of 39.5 °C, FC: 105 lpm, FR: 21 rpm; 85% baseline saturation, requiring a reservoir at 9 bpm for 94% saturation. Eutrophic, regular general appearance, auscultation with scattered bilateral crackles, no edema or phlogotic signs.

In extension tests: leukocytes 10.53 thousand / mcl, Neutrophils 85%, Hemoglobin 12.30 g / dl, creatinine 1.27mg / dl, Urea: 91mg / dl, CRP: 201mg / L, Lymphocyte 0, 20 mil / mcl, ferritin 900.9 ng / ml, d-Dimer: 0.98 mcg / ml, procalcitonin 6.52 ng / ml PCR-COVID-19 positive. Chest plain tomography: opacities in bibasal ground glass, suggestive of viral infection (COVID-19). (Photo 1).



Photo 1 Simple chest CT: opacification in bi-basal ground glass in both lung fields

He received lopinavir / ritonavir, ceftriaxone, azithromycin, and enoxaparin (10/10 days). Due to torpid evolution and persistence of inflammatory markers (ferritin: 515 ng / ml LDH: 903U / L, Leukocytes: 17.86mil / mcl, lymphocytes 0.40mil / mcl, d-dimer: 12.78), and suspected ARDS was associated dexamethasone, said BIPAP, maintaining SatO₂: 93-94%, with progressive improvement.

During his hospitalization, he presented several complications such as acute confusional syndrome, which required risperidone; steroid amyotrophy, with subsequent improvement. At discharge, he required home oxygen therapy; per month only night oxygen therapy.

At the moment, he continues to use oxygen at home at 2 liters. It was decided to perform a control tomography (photo 2).



Photo 2. Simple chest CT: ground glass opacity at a lower intensity than previous CT scans.

Patient who is kept under constant surveillance by medical personnel, in multidisciplinary management.

DISCUSSION

The variables that put older people at risk are several. These include underlying health conditions such as cardiovascular disease, respiratory disease, and insulin resistance; those that make recovery more difficult once the virus has been contracted.

Likewise, aging causes wear and tear on the body that makes it more difficult to fight new infections, especially from the age of 75 because the immune system is more weakened than at early ages. But not only health conditions and aging put older people at risk. Loneliness, as an emotion and isolation as a structural condition in which many of them live, play an important role in their ability to respond to illness. The lack of response from health systems can be a contributing factor to worsen the situation.¹⁰

The WHO (2020) insists that it is necessary to guarantee that older people are protected from COVID-19 infection without being isolated, stigmatized, left in a situation of greater vulnerability or without being able to access basic provisions and social care.

As the epidemic is still ongoing and there are several clinical trials that are currently being carried out, we are aware that the information may vary and many of the contents may lose validity in a short time. Even so, we have decided to present this clinical case of a nonagenarian patient, the same one who developed an ARDS that he managed to overcome.^{11,12}

CONCLUSIONS

Finally, it can be said that the COVID-19 pandemic situation in which we find ourselves, constitutes one of the most relevant geriatric emergencies of the last century. According to the data we have, it has already caused and will cause the death of a very important percentage of older adults in our country, especially those with previous comorbidities. It is therefore a

dramatic situation and a sanitary, epidemiological, social and political challenge today that we face.

REFERENCES

1. Avila j. Covid-19 coronavirus; pathogenesis, prevention and treatment 2nd edition - 03/15/2020. Available at https://evidencia.com/wp-content/uploads/2020/03/CORONAVIRUS-COVID-19_patogenia-prevenci%C3%B3n-y-tratamiento-2%C2%AA-Ed-15.03.2020-ISBN-978-84-16861-95-8-.pdf.
2. Vega, R. Emerging and reemerging zoonoses and basic principles of zoonosis control. *Veterinary Medicine Journal*, 1 (17), 85-97.
3. Coronavirus in the elderly patient: a geriatric emergency. Spanish Society of Cardiology. Available at https://secardiologia.es/images/secciones/geriatrica/Documento_Cardiologia_Geriatrica.pdf
4. Carter JB, Saunders VA. *Virology: principles and applications*. 2nd ed. Chichester, West Sussex: John Wiley & Sons; 2019.
5. World health Organization. Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected [Internet]. Jan 2020 Available at: [https://www.who.int/publications-detail/clinicalmanagement-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/clinicalmanagement-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected).
6. S. Huenchuan, COVID-19: General recommendations for the care of the elderly from a human rights perspective (LC / MEX / TS.2020 / 6 / Rev.1), Mexico City, Economic Commission for Latin America and el Caribe (CEPAL), 2020. Available at https://repositorio.cepal.org/bitstream/handle/11362/453164/S2000271_es.pdf
7. WHO (World Health Organization) (2020), "Coronavirus disease 2019 (COVID-19)", March 17, 2020, March 10, 2020 and March 14, 2020.
8. The Guardian (2020), "Isolation of Older Americans Prompts Fears Amid Coronavirus", Wed 11 Mar 2020 [online] <https://www.theguardian.com/world/2020/mar/11/isolation-older-americans-elderly-peopleworry-coronavirus>
9. Irfan, U. and J. Belluz (2020), "Why is COVID-19 so dangerous for older adults?", March 13, 2020.
10. L. Rho, L. Qiu, J.A. Strauchen, R.E. Gordon, A.S. Teirstein. Pulmonary manifestations of light chain deposition disease. *Respirology*, 14 (2009), pp. 767-770 <http://dx.doi.org/10.1111/j.1440-1843.2009.01560.x> | Medline
11. S. Sheard, A.G. Nicholson, L. Edmunds, A.C. Wotherspoon, D.M. Hansell. Pulmonary light-chain deposition disease: CT and pathology findings in nine patients. *Clin Radiol*, 70 (2015), pp. 515-522
12. Technical document Recommendations to nursing homes and social health centers for COVID-19. Version of March 5, 2020. Spanish Gerontology Society