

The COVID-19 pandemic – Many unknowns we have to face with

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Abstract

The Coronavirus Disease 2019 (COVID-19) Pandemic had a great impact on healthcare systems. Cardiology practice has been deeply changed in the past few months. In this context we have decided to dedicate this issue of our Journal to the Hypertension management in the era of COVID-19. This Editorial Foreword summarizes the current status of the Pandemic and presents the papers included in this issue of the Journal.

Keywords: COVID 19 Pandemic, Cardiology, Arterial Hypertension.

The knowledge about coronavirus disease 2019 (COVID-19) is rapidly evolving, however, the current status of understanding of the disease is rather primitive. At the end of 2019, when first cases were reported in China, the threat of a pandemic was inconceivable for most of the healthcare professionals. Soon, the virus spread rapidly throughout the world, and thus the medical community was obliged to combat an unknown enemy which was already responsible for thousands of casualties. There were two major challenges that had to be controlled in order to win the battle.

First, the healthcare infrastructure had to be entirely adapted so it could accommodate a large number of patients, a proportion of them requiring intensive care. Some of the countries, in which the virus entered with some delay, had the advantage of a longer period of preparation in this concern.

Second, the doctors had to manage a disease they did not know anything about before in terms of transmission, pathobiology or prognosis. Naturally, the first attempts of fighting the virus had employed analogies with previous coronaviruses epidemics such as Severe Acute Respiratory Syndrome related coronavirus (SARS-CoV) in 2003 and Middle East Respiratory Syndrome (MERS) in 2012. However, it soon became clear that the 2019 coronavirus is quite different from many points of view. The preservation of lungs from patients who died from acute respiratory distress syndrome (ARDS) secondary to influenza A(H1N1) infection has permitted the comparison of pathological lesions with those encountered in COVID-19 disease.⁽¹⁾ The lungs from patients with Covid-19 showed distinctive vascular features, consisting of severe endothelial injury, widespread thrombosis and vascular angiogenesis. (1) These findings reshaped the paradigm of the disease, indicating the endothelial damage as a major pathobiological link. The susceptibility to thrombosis was noted since the beginning of the pandemic, and various regimens of anticoagulation had been recommended in critically ill patients.

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The medical literature from the last 6 months is abundant in reports and studies related to COVID-19 disease. All this information is available globally for every healthcare professional and is mostly free. We noticed a high acceptance rate of papers related to COVID-19 disease even in high impact journals. Even though some of the manuscripts did not accomplish the usually required high standards, the hotness of the subject and the need for information made them rapidly publishable. On May 22nd, 2020, a registry study published in *Lancet* reported a decreased in-hospital survival and an increased frequency of ventricular arrhythmias when hydroxychloroquine was used for treatment of COVID-19.(2) On June 5th the paper was retracted by three of the authors due to several concerns with respect to the veracity of the data and analyses conducted by the fourth co-author.(3) This saga showed us once more the need for strong evidence before applying concepts into practice. Unfortunately, the rapid evolution of the pandemic did not allow for careful analysis of statistical data.

In practice, the pandemic had a great impact on the usual activity of all medical and surgical specialties. Referring to cardiology practice, the wards had to be reconfigured while the outpatient clinics restricted their activities. Cardiologist had to be acquainted to the personal protective equipment as well as to distance monitoring of their patients. The decrease of the incidence of acute coronary syndromes was reported around the world, although no explanation for this phenomenon is universally accepted currently. We are now in the stage of relaxation measures, and cardiology services tend to return to their usual, before pandemic activities. We are expecting a wave of severely ill cardiological patients who did not seek for medical attention due to fear of infection. Careful measures are still being taken in order not to contaminate patients and personnel.

The current status of technological development has permitted wide use of telemedicine – a concept which undoubtedly helped managing patients during pandemic. This opened the door for future development of systems able to distance monitoring of the patients.

The COVID-19 disease interacts in many ways to the cardiovascular system. The association of cardiovascular comorbidities increases the risk of death in COVID-19. Among them, arterial hypertension is the most prevalent. Although initial concerns were raised by the concomitant treatment with inhibitors of Renin-Angiotensin System, timely statements of the international scientific associations had made clear that their use should be continued in COVID-19 patients.(4)

Of note is the COVID-19 acute cardiac injury defined as the increased in troponin levels. Currently it is not clear whether this injury is secondary

to direct virus myocardial or endothelial cytotoxicity or myocardial damage in the context of systemic inflammatory response. However, isolated cases were reported of patients with COVID-19 and magnetic resonance imaging suggestive of myocarditis.(5)(6) Of great importance is to accurately follow-up the COVID-19 survivors in order to accurately know the impact of the disease on their long term prognosis.

In Romania, the timely social distancing measures have resulted in a relatively low infection rate, saving us from an unacceptable high pressure on the healthcare system. We dedicate this issue of our journal exclusively to the subject of cardiovascular disease during COVID-19 pandemic.

Professor Gianfranco Parati and his team from Department of Cardiovascular, Neural and Metabolic Sciences, Istituto Auxologico Italiano, Milan, Italy have a valuable experience in using information and communication technologies in the field of arterial hypertension. They propose a patient journey algorithm for the management of hypertensive patients including a 2-step triage in their editorial entitled “Treating hypertension through telemedicine in the COVID-19 era: will we ever go back to conventional consultations?”.

Doctor Oana Fronea gives an explanation for the worse outcomes of COVID-19 disease in hypertensive patients in her paper entitled “The target organ damage in hypertension - the link to worse prognosis of COVID19 patients”.

In Romania, one of the most experienced teams in using telemedicine is the one conducted by Stefan Busnatu from Carol Davila University of Medicine and Pharmacy, Bucharest. They discuss the advantages and the drawbacks of telemedicine in the management of hypertensive patients in their paper entitled “The ups and downs of telemedicine in treating arterial hypertension”. They highlight the fact that telemonitoring solutions can decrease the transmission of the disease by keeping at-risk people out of the waiting rooms and reducing their contact with healthcare facilities. However there is a strong need of long-term and well-designed clinical trials in order to reliably apply these applications in the life of real-patients.

Alexandra Paval comprehensively illustrates the interaction between SARS-Cov2 and Renin Angiotensin system, translating the fundamental research into practical recommendations in her paper entitled “ACEI/ ARB therapy during COVID 19 pandemic”.

Last but not least, we invited Bogdan Baciu, Marketing and Sales Coordinator of a private clinic in Bucharest to share his experience on reconfiguring the service during the pandemic, in order to offer the same high-quality healthcare for patients without exposing them to the risk of infection. His

institution is specialized in treating hypertensive patients using remote monitoring and his experience may be useful for other outpatient clinics.

We are obliged to face many unknowns these days. Sharing knowledge and experience may be life-saving. Through this special issue of our journal, we aim to contribute to the spread of ideas from renowned professionals in the field of hypertension.

Conflict of Interest

The authors confirm that there are no conflicts of interest.

References

1. Ackermann M, Verleden SE, Kuehnel M, Haverich A, Welte T, Laenger F, et al. Pulmonary Vascular Endothelialitis, Thrombosis, and Angiogenesis in Covid-19. *N Engl J Med* [Internet]. 2020 May 21; Available from: <https://doi.org/10.1056/NEJMoa2015432>
2. Mehra MR, Desai SS, Ruschitzka F, Patel AN. Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis. *Lancet* (London, England). 2020 May
3. Mehra MR, Ruschitzka F, Patel AN. Retraction of Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis. *Lancet* [Internet]. 2020 Jun 8; Available from: [https://doi.org/10.1016/S0140-6736\(20\)31324-6](https://doi.org/10.1016/S0140-6736(20)31324-6)
4. Bozkurt B, Kovacs R, Harrington B. Joint HFSA/ACC/AHA Statement Addresses Concerns Re: Using RAAS Antagonists in COVID-19. Vol. 26, *Journal of cardiac failure*. 2020. p. 370.
5. Besler MS, Arslan H. Acute myocarditis associated with COVID-19 infection. *Am J Emerg Med* [Internet]. 2020 Jun 2; Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7265842/>
6. Kim I-C, Kim JY, Kim HA, Han S. COVID-19-related myocarditis in a 21-year-old female patient. *Eur Heart J* [Internet]. 2020 Apr 13;41(19):1859. Available from: <https://doi.org/10.1093/eurheartj/ehaa288>