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Editorial

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The challenging battle of mankind against COVID-19 outbreak: Is this global international biological catastrophe the beginning of a new era?

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"COronaVIrus Disease-2019" (COVID-19) is a new and potentially deadly respiratory tract disease caused by a novel RNA virus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), that the mankind has been recently facing with and fighting with superhumanly. As far as we are informed by the health authorities till now, after a critical contact of the first case in humans with bats in Wuhan's animal market in China at the end of 2019, the Pandora's box was opened: disease, outbreak, and fear. But our hope and efforts are still in the box to defeat this invisible enemy. During the preparation of this editorial, COVID-19 has affected over 1.5 million people worldwide, and with over 90,000 deaths, in more than 210 countries globally, since its first emergence as "...a mystery viral pneumonia outbreak..." in November 2019, in Wuhan, China.[1] The main properties of SARS-CoV-2 are its high virulence and relatively low fatality. Fortunately, according to the reports till now, COVID-19 has relatively lower reported fatality rate of 3.7%, compared with diseases associated with SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV) which are 9.6% and 34.4%, respectively.[2] The success of public health measures (isolation of cases, contact tracing, quarantine of all contacts, social distancing, community quarantine, etc.) on the management is supposed to depend on differences between SARS and COVID-19, rather than the similarities. They have been reported as follows: (1) COVID-19 has a higher transmissibility than SARS. (2) Many more patients with COVID-19 rather than SARS have mild symptoms that contribute to spread because these patients are often missed and not isolated.[3] Moreover, regarding public health, a special attention should also be given to the self-protection and self-quarantine of high-risk patients with comorbidities (e.g. chronic lung diseases such as bronchial asthma and chronic obstructive lung disease, hypertension, chronic liver diseases, immunocompromised patients, oncological patients, age higher than 60, etc.) in order to prevent exposure to the virus and diminish the possible further transmission, morbidity, and mortality.

Considering its incredibly fast global spread, COVID-19 was declared firstly as "public health emergency of international concern (PHEIC)" on January 30, 2020, and lastly as a "Pandemic" by the World Health Organization (WHO) on March 11, 2020, with the words of Dr. Tedros Adhanom Ghebreyesus, WHO Director General: "This is not just a public crisis, it is a crisis that will touch every sector." Although this critical situation was previously underestimated by most of the countries in the world, which were not prepared and ready in most aspects of this crisis at the beginning, tremendous increase in recognition, serious preventive and safety measures, limited social and public traffic, closed borders and even lockdowns have been observed in nearly all countries. Our regular lifestyles have nearly stopped except the continuation of vital needs, processes, communications, and limited interactions worldwide.

Historically, since the first reported pandemics in Greece known as "Plague of Athens" 429–426 BC, humanity faced with a lot of pandemics in the past. Most virus pandemics have been caused by influenza (flu) viruses.

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In the near history, some of the remarkable ones are as follows[4]: Spanish flu in 1918 (nearly 50 million deaths), Asian flu in 1957–1958 (nearly 1.1 million deaths), Hong Kong flu in 1968 (nearly 1 million deaths), SARS between 2002 and 2004 (774 deaths), H1N1 Swine flu in 2009–2010 (estimated between 150,000–575,000), and MERS since 2012 till now (862 deaths as of January 13, 2020).[5] According to the WHO, seasonal influenza typically causes 290,000–650,000 deaths per year.[6] Going back, but nor so far, the warning about pandemics which was emphasized in the *Nature* journal in 2010 should be remembered: "The reality is that next time we might not be so lucky—especially given that this time most of the world's population, living as they do in developing countries, had no access to either vaccines or antiviral drugs. Governments and scientists would do well to redouble efforts to reinforce our pandemic defenses, and to draw what lessons they can from this outbreak as a dry run for a more severe pandemic."[7] We should also consider seriously the warnings published in the previous editorials related with SARS in our journal in 2003.[8,9]

From humanistic and scientific point of view, what we have been living now due to COVID-19 pandemic is so much more that the famous quote "The death of a man is a tragedy, the death of millions is a statistic." Because, as basically, we are the integration of our genetics and our surrounding environment, Mathematics does not work in Biology! Scientifically, considering the fact that COVID-19 is an emerging, rapidly evolving situation—as stated in PubMed—, more than 3000 scientific articles have been published in nearly 5 months, since its first emergence in 2019.[10] Obviously, this trend will increase tremendously to put forward newly found results and evidences, and finally to find out its definitive treatment. The preclinical and clinical aspects of this disease are summarized in detail in the review article of this issue.[11]

Importantly, early and tragic clinical experiences of China, Italy, and Spain have guided and warned all clinicians and decision makers of all countries worldwide in order to take important preventive measures in clinics and in the living societies and to improve management strategies for COVID-19. Currently, similar but not the same protocols, and preventive measures have been applying by health authorities of most countries for the management of COVID-19. It was recently reported that whether traditional public health measures used during SARS-CoV might not be able to halt all human-to-human transmission to the higher extent of community spread of SARS-CoV-2, and that changing of the political, social, and personal attitudes from containment to mitigation should be considered.[3]

From an Orthopedic surgeon's point of view, although we do not work on the front lines of the COVID-19 pandemic, we have had a lot of experiences on the management of musculoskeletal diseases especially during extraordinary conditions such as wars, disasters, and so on in the past. Nowadays, we have been going on performing surgeries on mainly traumatology and musculoskeletal oncology only in the emergency settings. But, as orthopedic surgeons, we should also be aware of the current overall situation and modify our way of thinking, working, and living, accordingly. When a confirmed or suspected COVID-19 patient needs a surgical procedure, ward and operation room should be prepared for preoperative, intraoperative, and postoperative requirements. This critical period must be guided cautiously and strictly in a careful manner starting from the ward and together with whole medical team.[11] On the other hand, we must postpone all elective surgeries and strictly follow updating guidelines, recommendations, and protocols of international (e.g. WHO and Center for Disease Control and Prevention (CDC)) and national authorities. We should always keep in mind that all health-care workers are at most risk during this critical period due to high risk of human-to-human transmission. In each level of risk groups, requirements must be critically applied, properly and accordingly, such as hand hygiene, surgical masks, N95 respirator mask + gown + goggles + gloves, and so on.

As the number of patients and losses has been currently augmenting by the time, many countries will face with the shortage of mainly medical equipment including personal protective equipment (PPE) and ventilators in intensive care units. Among all PPE, special closed protection of eyes, nose, mouth, and all respiratory mucosal surfaces of especially health-care providers is of the utmost importance, as these areas were reported as the main entry points of the virus to the human body, as far as we know so far. But there are many obstacles, which we have now been facing with, in terms of its continuously changing structure, transmission, infectivity, clinical symptomatology, infection control, treatment modalities, and prevention strategies. As structure determines function in vital structures, we must know our enemy. So, well understanding of its structure is the first step to cope with this global disaster, and health threat, COVID-19. Regarding management strategies, although there have been various efforts to treat COVID-19, such as novel vaccines, specific drugs, antibodies, host-directed interventions, antimalarial/antiparasitic/antibacterial antibiotics (such as hydroxychloroquine, ivermectin, and azithromycin), therapeutic plasma exchange, and so on, currently there is no known reported "definitive treatment" modality for COVID-19. Moreover, unfortunately, there is no reported immunity to SARS-CoV-2 till now. During our current fight against SARS-CoV-2, ultimate understanding and evaluation of the genetic structure, pathophysiology, transmission characteristics, daily growing epidemiological data, and amelioration of prevention, isolation, and management strategies, considering the sociopsychology, basic requirements, and motivation of the human beings, especially health-care providers are extremely important. As health-care providers, we must also consider and well balance the worries,

relations, psychological status of all members of our families and our collaborating colleagues during this critical period (Melek Bilge, MD, 8 April 2020, personal communication).

In conclusion, it is true that nothing can be and will be the same in the world from now on. The COVID-19 pandemic has affected all of us in many aspects and we will feel its multidirectional future effects closely for decades. This pandemic dramatically also reminded us and all countries, the importance of our health, mainly the immune system, our genetics and of sustainability of public health system measures in preprepared manner, respectively. We must slow down our lives and change our way of thinking, acting, and sharing, as each person, and as global societies. We are not so strong each, and we are all just humans without any discriminations and superiorities. But we have feelings. In this respect, while getting rid of unhealthy and unnecessary ambitions and dispraises, as humans, we should hope and appreciate that this unwanted life-threatening situation will be a big chance for us and may lead to change the human beings toward being more respectful and appreciative to the nature, to ourselves, to each other, and to other living species. During this transitional period, the present global panic so-called "Coronaphobia" should be handled by patients, health-care providers, scientists, governors, and all members of the public society with great care, cooperation, patience, and harmony. The main strategy must be to delay and lower the peak of the pandemic by the time in order not to overload and even lock the health systems. In this respect, the iconic slogans of the COVID-19 pandemic such as "Please stay home and stay safe!", "Wash your hands with soap!", and "Wear a mask!" will be unforgettable trails of today in the future.

As a future prospect, the mankind has many lessons to learn from the COVID-19 pandemic as quick as possible in order not to suffer from this and further possible outbreaks. Although fast globalization at the beginning of this century has led to incredibly increasing interactions between humans and other species, two aspects of this pandemic are also important: health safety and economical safety. Increasing investments in education, science, technology, and health-care systems should be the focus of future decision makers. As scientists and health-care providers, we should share our knowledge, medical and personal experiences, preclinical and clinical results, achievements, failures, and mistakes honestly in a transparent and cooperative manner. Although the specific time for winning the battle of mankind against COVID-19 outbreak is unknown for now, the winner should and will be honor, perseverance, and conscience of the global international humanity. After the days of social isolation, social distancing, personal and social protection, these difficult days will be over. But as human beings, we must be much more attentive, thoughtful, and sensitive in order not to damage our beautiful Planet, and surrounding other people intentionally anymore, and consequently to protect ourselves from the vengeance of the Mother Nature, which may be much more damaging and even discarding for us. Do we know the answer of that question: "Will the viruses guide our lives further?". Probably, the dynamism of the viruses will guide our way of living and thinking further. Since now, we must wake up, get rid of personal, national, and international ambitions, jealousies, external and internal damages, and increase our personal and social awareness, and be much more careful, patient, humane, and respectful, consecutively. This may be our last chance, and although there are many obstacles in front of us, we must win this war between macroworld and microworld. May be the current critical time period is the birth of a new era of sustainable life, health, economics, and technology in all aspects, who knows? The master "Time" will show us the answers clearly.

With Hope!

Respect to the Science!

Respect and thanks to our colleagues and all global health-care workers, and scientists, as true heroes of this moment to save the future of our Planet!

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