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COVID-19 and diabetes from IDF MENA region



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ABSTRACT

The whole world are facing the current COVID-19 pandemic, the most serious health crisis in modern times. All countries with the support of national and international agencies are making great efforts to fight this devastating pandemic with disastrous medical, economic and social consequences. This pandemic affects all people but it's serious in case of diabetes, elderly and in chronic and complicated diseases. The current work on the theme "COVID-19 and Diabetes" attempts to bring together all the data available at MENA level through medical and scientific publications. It also includes all the efforts made by the governments and the responses of associations and their efforts in this field. Even if it is admitted that diabetes with its comorbidity represents a high risk factor for severe forms and mortality, the health consequences of the epidemic, does not seem as dramatic in terms of both morbidity and mortality of COVID-19 with diabetes in the majority of MENA countries. If the crises continues longer, the supply of insulin, oral drugs, self monitoring equipment of diabetes and other tools, will be affected. To this, we must expect great difficulties in supplying food for many countries. Certainly, it is important to remember that containment and hygiene measures, associated with other factors such as the young average age of the population, the higher temperature in these countries, the differences in the immune status of populations and the role of BCG vaccine have something to do with it. All of this deserves to be studied in depth.

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Our MENA Region and the whole world are facing the current COVID-19 pandemic, the most serious health crisis in modern times. Indeed, the World Health Organization (WHO) declared the current COVID-19 a public health emergency of international concern on January 30, 2020 [1].

All countries with the support of national and international agencies are making great efforts to fight this devastating pandemic with disastrous medical, economic and social consequences.

Sparing no social strata, this pandemic affects also people with diabetes, the elderly and those with chronic complications.

The current work on the theme "COVID-19 and Diabetes" attempts to bring together all the data available at MENA level through medical and scientific publications. It also includes

all the efforts made by the governments and the responses of associations and their daily efforts in this field.

1. Current number of people infected with COVID-19 and diabetes and the deaths in MENA Region

Currently, we have general data in the world on May 28th: 5.879.511 positive cases, 2.576.254 recoveries, and 360.691 deaths [2]. In the same time, the data available in the MENA Region shows very low rates compared to those in Europe and in United States, except Iran. As of May 28nd, there were 470.746 positive cases, 255.532 recoveries and 11.728 deaths (including 7.627 in Iran) [3].

Because of the exponential increase in the number of cases and deaths, many countries have adopted pandemic preparedness measures and proactive approaches, such as entry restrictions from affected countries; temperature screening; quarantine of those who have contacted infected or those deemed to be in the incubation period; and public education and awareness [4].

In the majority of MENA Region countries, effective contact tracing and proper quarantine action, in addition to systematic testing only of suspected patients presented to nationwide health institutes with acute respiratory symptoms was conducted in order to avoid losing track of the cases with COVID-19.

A recent study showed that many countries in Africa including some countries that are part of the Eastern Mediterranean Region (EMR) have variable capacity to respond to outbreaks and high vulnerability [5]. Beside the protracted conflicts in many countries in the region, lack of infrastructure, limited resources, inadequate prevention control practices, poor preparedness capacity, and inadequate laboratory infrastructures and resources in many countries in the EMR are among the main barriers to adequately detect and respond to COVID-19. Many of the EMR countries addressed the need for increasing capacity in the areas of surveillance and rapid identification of suspected cases, patient transfer and isolation, rapid diagnosis, tracing and follow-up of potential contacts, strict health facility infection prevention and control, and other active public health control interventions. Moreover, countries addressed the need for communication strategies that provide general populations and vulnerable populations with actionable information for self-protection, including identification of symptoms, and clear guidance for seeking treatment.

Are patients with diabetes at increasing risk of COVID-19? There is not enough data to show whether people with diabetes are more likely to get COVID-19 than the general population. The problem people with diabetes face is primarily a problem of worse outcomes, not greater chance of contracting the virus [6,7].

In addition, an incremental increase in both HbA1c as well as diabetes-related complications, with the increase in the duration of lockdown days is demonstrated. A pre-planned strategy must be put in place to prevent such a scenario as poorly controlled diabetes is an independent risk factor of mortality from COVID-19 [8].

Similarly, in the MENA Region, even if it is admitted that diabetes with its comorbidity represents a high risk factor for severe forms and mortality, the consequences of the pandemic, with the exception of Iran, does not seem as dramatic in terms of both morbidity and mortality of COVID-19 with diabetes.

Furthermore, there is not yet enough data around pediatric cases, pregnancy, diabetes and COVID-19.

2. Health personal available

In most countries, physicians and nurses have trained in the new strict hygienic conditions required by COVID-19. The health structures and the technical means of care available

vary widely according to the countries of the Region. In the absence also of effective treatment, governments and political powers have engaged in anticipatory and preventive strategies, with the adoption of barrier hygiene and more or less generalized lockdown measures.

In different countries of the region, considerable efforts have been made to equip and strengthen intensive care units. New units in hospitals and private clinics have been dedicated to the coronavirus with medical teams trained in new hygiene and treatment measures. In some countries, such as Morocco, field hospitals have been built with the support of the army.

Huge efforts have been made by governments, scientific and civil societies not only in terms of care and specific care but also in terms of education and awareness raising among the general public and diabetics in particular. This is how we noted the strengthening of educational advice and messages through the various media (radio, television, social media) and the development of new approaches to education and remote consultation by tele medicine. Physicians, all sectors combined in all countries of the Region, have used these new forms. Given the postponement of all scientific events (regional and international medical conferences, workshops and continuing education sessions), the use of digital technology through the development of webinars, has experienced significant growth. This approach has reached thousands of physicians and health professionals.

3. Support from the local and international agencies including government

The Global Health Development (GHD)/Eastern Mediterranean Public Health Network (EMPHNET) and the EMR's Field Epidemiology Training Program (FETPs) has helped to prepare for and respond to the current COVID-19 threat. GHD/EMPHNET has the scientific expertise to contribute to elevating the level of country alert and preparedness in the EMR and to provide technical support through health promotion, training and training materials, guidelines, coordination, and communication. The FETPs are currently actively participating in surveillance and screening at the ports of entry, development of communication materials and guidelines, and sharing information to health professionals and the public. However, some countries remain ill-equipped, have poor diagnostic capacity, and are in need of further capacity development in response to public health threats. It is essential that GHD/EMPHNET and FETPs continue building the capacity to respond to COVID-19 and intensify support for preparedness and response to public health emergencies [4].

In the same time, in different countries of MENA Region, Higher Consultatory Scientific Committees was founded, composed of experts of epidemiologist, infectious diseases, pulmonologist, public health and community physicians experts. These Committees are headed by the Prime Ministers and was put in charge for managing COVID-19 pandemic. Some of members of our members associations was involved in these committees.

The Ministry of Health teams in different countries, in coordination with other governmental institutes had started

series of active surveillance visits, contact tracing and screening for random areas nationwide in order to achieve early detection of the cluster and limit spread of COVID-19. This strategy is accompanied in parallel with passive surveillance.

Lack of resources is a problem in reporting COVID-19 cases in the majority of MENA countries, especially in Yemen, Libya, Sudan and Syria. Civil wars have weakened infrastructure and divided governments, making it difficult to detect the virus and care for those infected.

The duration of lockdown is directly proportional to the worsening of glycemic control and diabetes-related complications. Such increase in diabetes-related complications will put additional load on overburdened healthcare system, and also increase COVID-19 infections in patients with such uncontrolled glycemia.

Across MENA, hotlines, call centers and other remote modalities are being adapted and enhanced to provide support to people of concern, whether for protection-related issues or to report on active cases, or as a form of triage, such as in Algeria, Morocco, Tunisia, Jordan, Lebanon and the Syria. Communication with communities has also been strengthened along with partners and other UN agencies, including in camps and camp-like situations or in urban areas with high concentrations of refugees. In the most countries health awareness and sensitization campaigns on COVID-19 are being rolled out through health personnel, partners and community outreach volunteers.

On the other hand, and to cope with the disastrous effects of the Covid-19 on the national economy, the public authorities in certain countries have created solidarity funds. The example of Morocco is very instructive with the creation of a special dedicated fund for the management of this pandemic. Different public and private organizations, insurance companies, banks and individuals have raised more than \$ 3.3 billion in just a few days. International organizations such as the UN and some foreign countries have also participated.

In addition, and on the occasion of this pandemic, we must salute the enormous efforts of generosity and medico-social solidarity that have developed in the various countries, in collaboration by the public authorities with all civil and non-governmental societies and institutions.

4. Supply of emergency medical supply including insulin for people with diabetes

It's obvious that the global coronavirus problem affects the quality of diabetes care and the availability of medicine, the resources and supplies for monitoring diabetes. Also, the situation is worsen by poverty as well as, economics and social problems.

Some countries don't have big difficulties (Maghreb, Egypt, Golf Countries, Saudi Arabia, Pakistan, Iran..), but others are experiencing chronic problems aggravated by the COVID-19 situation (Sudan, Lebanon, Palestine, Yemen, Afghanistan..). If the duration of the pandemic increases, the situation risks becoming disastrous in most of these countries.

Also, masks, ventilators, and protective gear needed to care for COVID-19 patients have been hard to come by as sup-

ply chains have been disrupted, and functioning hospitals are disturbed by this problem especially for protecting medical and nursing staff.

In Syria, there are more than 6 million internally displaced people living in overcrowded refugee camps. These camps are a perfect place for a virus to flourish, with tightly packed communities that lack appropriate health and sanitation services. It is true that the problem is particularly acute in the case of refugees and in conflict in other zones (Lebanon, Yemen, Iraq, Libya,..). The supply chain, especially for insulin, is complex and under the control of the public authorities. In Iran and because of US economic sanctions, great difficulties were encountered in the supply of insulin and medical equipment and those despite the creation of an advocacy committee for insulin.

There is no approved treatment for COVID-19; the care advised in the MENA Region is to give supportive management according to each patient's need; Such as antipyretics for fever and oxygen therapy for patients with respiratory distress. Moreover, WHO recommendations for severe cases are to give empiric antimicrobial therapy and implement mechanical ventilation depending on the patient's clinical condition. The treatment protocols across countries are similar. They are using Hydroxychloroquine, Chloroquine phosphate, Remdesivir, and Lopinavir/Ritonavir [9]. Despite the inconclusive results on Hydroxychloroquine [10], several countries in the region including Morocco and Algeria continued to use this drug.

For diabetic treatment, insulin is widely used for the treatment of diabetes. The same is true for sulphonylureas in many countries of MENA Region. The gliptins are generally well tolerated without specific contraindications in non-severe forms. However, regarding to the more recent findings, DPP4i might be considered to be a double-edged sword. Apart from the metabolic benefit, the associated immunological effects induced by DPP4 inhibition, may bring out benefits or side effects under different conditions [11].

For the majority of the MENA Region countries, if the crises persists longer, the supply of insulin, oral drugs, self-monitoring equipment of diabetes and other tools, will be seriously affected. To this, we must expect great difficulties in supplying food for many countries.

While all efforts are focused on COVID-19, it has been observed worldwide and in countries of the MENA Region, a reduction of more than 50% in hospitalizations for cardiovascular emergencies and other usual emergencies. Similarly, a drop of more than 75% in consultations for diabetics, especially those with comorbidity is also noted. These data are a big wake-up call to the risks for diabetics if the COVID-19 epidemic continues.

Regarding fasting during Ramadan in diabetic patients [12], recommendations are supported by the IDF [13] and ADA/EASD [14]. This year, with COVID-19 and given the many risks associated with Diabetes and COVID-19, it would be strongly recommended that diabetics, not to fast this year.

In any case, it is strongly recommended for physicians to maintain contact with diabetic patient and to intensify more intense surveillance of people who insist on fasting.

On the other hand, the population in general and diabetics in particular experienced this epidemic with great anxiety.

Indeed, the general and global climate imbued with anxiety-provoking and repetitive information throughout the day, conveyed by television sets and on social medias is responsible for important psychological consequences that are sometimes very deleterious.

5. Perspectives in managing the pandemic in the region

No one can predict the global epidemic in the coming months. This modesty of humanity in the face of a completely new situation makes any prediction difficult.

If, alongside other health measures, confinement and social distancing have become one of the priority responsive and proactive tools in many countries, they have led to an unprecedented economic crisis on a global scale, characterized by an almost total blockage of movements and of production factors. Thus, the economic crisis expected for the year 2021 is unprecedented in its scale and extent.

As we reported initially, it is very surprising to note the large differences in morbidity and mortality very high in European countries, the United States, while the countries of the MENA Region and Africa while undergoing the pandemic and despite their limited human and medical resources were not as affected. Probably the containment efforts and the barrier gestures rapidly deployed in these countries have limited the unfortunate human consequences. The young average age of the population, the higher temperature in these countries, the differences in the immune status of populations and the role of BCG vaccine have something to do with it. All of this deserves to be studied in depth.

Severe lockdown has some negative implications. Its immediate result is an increase in the level of unemployment and the drop in GDP. This will eventually lead to an increase in poverty and to human life loss due other diseases.

Given that the evidence reveals that the COVID-19 declines even without a complete lockdown, it is recommendable to reverse the current policy and remove the lockdown. At the same time, it is advisable to continue with low-cost measures, such as wearing masks, expanding testing for defined populations and prohibiting mass gatherings.

As part of this strategy, it is then necessary to move from generalized confinement to a gradual lifting of the confinement, taking into account the following parameters:

- epidemiological criteria showing a significant reduction and stabilization in the number of hospitalizations and / or new cases over an extended period;
- sufficient capacity of health care systems, for example in terms of hospital beds in intensive care, quarantine areas, pharmaceuticals and stocks of equipment;
- adequate follow-up capacities, in particular large-scale screening and follow-up capacities for sick and quarantined people, as well as more generalized identification of suspected cases.

6. Conclusion

Diabetes is associated with increased incidence and severity of COVID-19. There is experimental evidence of the effect of diabetes on viral entry into cell and inflammatory response to the infection. It is important to control blood glucose in patients who are infected with COVID-19. Treating diabetes at present with restrictions on movement is challenging; however, innovations like telemedicine can be useful in these trying times.

In the MENA Region, even if it is admitted that diabetes with its comorbidity represents a high risk factor for severe forms and mortality, the health consequences of the epidemic, does not seem as dramatic in terms of both morbidity and mortality of COVID-19 with diabetes.

For the majority of the MENA Region countries, if the crises continues longer, the supply of insulin, oral drugs, self monitoring equipment of diabetes and other tools, will be seriously affected. To this, we must expect great difficulties in supplying food for many countries.

Finally, it is important to remember that containment and hygiene measures, associated with other factors such as the young average age of the population, the higher temperature in these countries, the differences in the immune status of populations and the role of BCG vaccine have something to do with it. All of this deserves to be studied in depth.

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Declaration of Competing Interest

The author declares no conflict of interest.

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