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Diabetes Management during the COVID-19 Pandemic – Lessons from Action Plans in CEDA Countries

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The COVID-19 pandemic and the lockdown actions implemented to combat spreading of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) have put healthcare providers in an unprecedented situation. Heavily restricted access to hospitals and doctors' offices made traditional patient visits difficult, leading to a need for new strategies in diabetes care. As different countries implemented different strategies, leading diabetologists from member countries of the Central European Diabetes Association (CEDA) who are also CEDA board members were inquired about the measures put into place to maintain adequate care for people with diabetes. While solutions to some problems were easily manageable, e.g. reviewing blood glucose data through cloud-based dedicated diabetes management portals whenever possible, others, like injection training in insulin-naive patients, were more difficult to overcome. One common theme from many reports that described their countries' responses is that visits requiring direct patient contact were transformed into phone calls or some form of digital communication, with only emergencies being allowed direct access to their diabetes care provider.

Generally, care for patients with type 1 diabetes (T1D) has been found to be

less problematic in a digitalized setting since a significant number of these patients already use a device for continuous glucose monitoring (iscCGM or rtCGM), respectively, thereby having access to web-based programs that are capable of compiling glucose data for expert review and even give an accurate estimate of the current haemoglobin A_{1c} (HbA_{1c}).

Poland

Professor Dr. Tomasz Klupa, Krakow, Poland, describes this type of patient visit as essentially being the same as one in an outpatient clinic:

The most interactive visits concerned patients using advanced technologies like insulin pumps and/or CGM, mostly patients with T1DM. These visits included: 1) Data from pump/CGM upload via cloud and with the usage of dedicated software (e.g. Medtronic CareLink, Abbott LibreView). This allowed to obtain and review practically all clinical data crucial for diabetes management and made following phone conversations more productive, 2) phone calls: discussing the clinical course in the last few weeks as well as pump and CGM data, followed by clinical recommendations, and 3) e-prescriptions.

For people with type 2 diabetes (T2D), however, this was often not a viable approach since most of their glucose measuring devices are not designed to support sharing blood glucose data through a computer-based infrastructure.

Notably, some institutions in Poland also offered psychological support for patients, which seems prudent for a high-risk population, given that multiple reports of attempted suicide due to psychological stress associated with COVID-19 have been published in the literature.

In some centers including Jagiellonian University in Krakow, psychological support was offered for patients with diabetes, and was accepted and appreciated by about 10% of them.

Hungary

One obstacle that became more prominent during the COVID-19 crisis, especially in patients with T2D, were reimbursement restrictions for newer medications. Many countries chose to temporarily lift regulatory restrictions and allow for electronic or phone prescriptions until office and hospital visits were possible again. **Professor Dr. Péter Kempler from Semmelweis University in Budapest, Hungary**, and head of the Hungarian Diabetes Association, reports about the efforts made in his country to ensure continuous access to all diabetes drugs as well as self-monitoring of blood glucose (SMBG) equipment:

The COVID-19 epidemic provided some possibilities regarding alleviation of some regulations concerning diabetes management in Hungary. Insulin as well as all other innovative antidiabetic agents can be prescribed by specialists of internal medicine,

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and based on their specialist's advice, general practitioners may prescribe the drugs for a whole year in advance. During the epidemic, many of these advices expired. Based on a recommendation from the Hungarian Diabetes Association, these advices remained valid until 90 days after the emergency situation was officially proclaimed to have ended. (...) However, [this] did not include medical equipment, including strips for SMBG. Following the request of our association, prescription of medical equipment through e-receipts became possible.

Additionally, the Hungarian Diabetes Association created the possibility for general practitioners to consult with diabetologists online for free.

Bulgaria

Substituting procedures that usually require hands-on training by a nurse or physician, e.g. proper use of glucometers and self-injection of insulin, proved to

be one of the more difficult tasks during the pandemic. **Professor Dr. Zdravko Kamenov**, head of the **Clinic of Endocrinology at the Medical University of Sofia, Bulgaria**, reports that information about diabetes and use of medication and devices was broadcasted in television programs, a measure primarily targeting people with type 2 diabetes who rely more on traditional media, while also enhancing accessibility to information online by making it available in the local language:

An automatic extension of the validity of the protocols and prescriptions of medicines was provided by the National Health Insurance Fund in order to reduce the need for visits to pharmacies. Pharmaceutical companies committed to ensuring a stable and continuous supply of medicines and consumables to all people with diabetes. Training webinars and TV shows were held for both doctors and patients. In addition to the detailed information on Bulgarian Diabetes Association

website, the JDRF (Juvenile Diabetes Research Foundation) and Beyond Type 1 websites were made available in Bulgarian. A hotline for consulting patients with diabetes has been launched, facilitating telemedicine approaches. Actually, the COVID-19 pandemic accelerated the physicians' and authorities' discussion and organizational activity in this aspect and several telemedicine platforms were proposed by Bulgarian IT companies.

Czech Republic

With limited availability of specialists to consult, the family doctor involuntarily had to become a "jack-of-all-trades" for many diseases. This left many colleagues in need for easily accessible educational offers for managing diabetes-related problems that are usually referred to specialists. National diabetes associations in many countries offered such help through numerous webinars, often also taking COVID-19-specific problems

into account. As **Professor Dr. Jan Škrha, president of the Czech Diabetes Society**, points out, these offers were met with a positive response and had numerous participants:

During the COVID-19 pandemic we used telemedicine, mainly direct telephone calls with patients (with older type 2 diabetic patients) or e-mails with those who preferred it that way. With some type 1 diabetic patients on insulin pumps and CGM we were in contact by using cloud-based systems (CareLink, Diasend). We did not organise webinars with patients but many of them with physicians. For diabetes-related topics we had around 700–1 000 participants.

Serbia

We have yet to see compelling data about whether these measures did have a significant impact on the outcome of COVID-19 in patients with diabetes or even whether they helped to limit glycaemic deteriorations. Serbian diabetologists chose a proactive approach in that regard by making crucial information available in the local language and putting it online but also distributed information through pharmacies, as **Professor Dr. Nebojša Lalić from the University of Belgrade, Serbia**, explains: *From the very beginning, it became apparent that diabetes, especially with poor metabolic control and chronic complications, represents an important risk factor for the worsening of the outcome of the disease. Taking into account the importance of optimal control of diabetes during COVID-19, at the beginning of epidemic, the National Diabetes Committee has translated the IDF Europe information on diabetes in COVID-19 and the adapted Sick Day Rules. This information was rapidly distributed through many channels, e.g. the websites of the National Institute of Health, important patients' associations and, in paper form, through the major pharmacies. These activities were important in counteracting the isolation of patients with diabetes from their regular health providers due to the necessity to find enough capacity of the health care system to treat COVID-19 patients.*

Greece

Greek diabetologists took the route of empowering patients to protect themselves from COVID-19-associated harm by publishing information about diabetes management in case of infection. To minimise that risk in the first place, some high-risk patients were temporarily freed from working responsibilities, as **Professor Dr. Erifili Hatziagelaki from Attikon University Hospital in Athens, Greece**, explains:

The Ministry of Health gave patients with uncontrolled diabetes ($HbA_{1c} > 7\%$) and diabetes-related complications the opportunity to receive a special permit and stay at home.

Austria

The Austrian experience during COVID-19 was quite similar to what colleagues mentioned above reported. Device training for glucometers and insulin pens proved to be the most difficult part of diabetes care during the pandemic. Generally, physicians tried to solve this problem via phone instructions on device use, with follow-up calls soon thereafter. Somewhat surprisingly, most patients did not have any problems with their devices. As for drug availability, Austria did not go through any drug shortages during the pandemic. Medication prescriptions were possible either by phone or electronic communication and all health insurance providers waived reimbursement requirements for monthly prescriptions.

Conclusion

Taken together, diabetologists in most CEDA countries primarily relied on phone and digital visits as a substitute for face-to-face appointments. This approach seems to work well for younger patients with diabetes who are technically adept and should remain available as a valuable supplement to personal face-to-face interaction even after the end of the pandemic. However, for many T2D patients, who belong to a high-risk population, apps and other web-based solutions are usually not an option, thus additional research is warranted to improve accessibility of

digital aids in this vulnerable population.



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