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Editorial

Majorly Resurgent and Uncontrolled Diabetes During COVID19 Era, and in the Future Can Be Contained in India



1. Editorial

Patient, previously not known to be having diabetes, was 30 y old and suffered from mild symptoms of COVID19. His all parameters including oxygen saturation were normal. He was put on high dose methylprednisolone from day 2 by his physician, and on day 7 his random blood glucose value was detected to be 430 mg/dl.

This is a common scenario in India today. Daily, numerous panic calls to the physicians are being made by such patients. Importantly, such markedly hyperglycemic states are hard to treat. In home quarantined patients, insulin treatment is difficult to initiate and often not aggressive enough because medical instructions are not dynamic and continuous, resulting in inadequate control of glycemia. Even in hospitalised patients, management of high blood glucose levels is given low priority. As a result, exacerbation of complications, hyperglycemic hyperosmolar states, ketoacidosis and secondary infections including rhinocerebral mucormycosis are likely to occur.

In previously published research and reviews related to COVID19 and diabetes, we and others had emphasised various ways that COVID19 can cause *de novo* hyperglycemia or exacerbate it in patients with diabetes [1–3]. Several factors are responsible for it; systemic stress, effects of cytokine storm, enhanced PKA signaling, direct damage to beta cells by SARS-CoV2, and use of corticosteroids. As Pandemic rages on, we have learned a few lessons. Hyperglycemia due to significant beta cell damage appears to be less frequent, and this effect is largely transient (e.g., short lasting ketoacidosis) [4]. Other mechanisms, as listed above, have been operative to a variable extent.

Lately, with rapid increase in COVID19 in most cities in India, more cases of uncontrolled diabetes are coming forward (personal observations). In most cases use of high doses of corticosteroids are at fault. Use of these drugs has increased so much that there is scarcity in the pharmacies. Currently prevalent COVID19 treatment protocols now include corticosteroids even in mild disease contrary to International guidelines. Some Indian protocols state use of corticosteroids in those with mild disease, high fever and worsening cough from beyond 7 days only. While it is difficult to assign any strong scientific rationale to this diktat; it would further lead to increased misuse of steroids. In this context it is important to mention resurgence of previously rare rhinocerebral mucormycosis too. Series of cases have been reported from Jaipur [5], Bangalore [6] and Mumbai [7]. Most of these cases had diabetes, were hospitalised for 10–14 days and were on corticosteroids [8]. Such cases need complex multidisciplinary management and carry high mortality rate.

To summarise; increasing number of newly detected cases of diabetes, many with markedly uncontrolled diabetes, resurgence

of infections including rhinocerebral mucormycosis, and likely increase in burden of diabetes complications [9]; all portend huge burden of diabetes and its complications subsequent to COVID19 in India.

Resurgence of all NCDs is likely to occur in India and would put further burden on drained out exchequer [10] Diabetes is a prototype of other non-communicable diseases; uncontrolled glycemia is more visible, and immediately troubling to patients. How can we mend this broken scenario? Future actions could be divided into immediate, short term, and long term. Immediately, for patients, we must emphasise on regular diet and exercise regimen [9,11], and medicines under physician's advice to maintain proper glycemic control. For these teleconsultations have proved to be useful [12]. We should also emphasise blood glucose check in a routine manner for apparently non-diabetic adults (2). In hospitalised patients, insulin should be aggressively used to control diabetes. In outpatients, insulin should be initiated using teleconsultations, or illustrative videos; and dose calibration should be done in best possible manner. Finally, use of corticosteroids should be used for a defined period as per universal guidelines. At the governmental level, supply of insulin and necessary drugs, including amphotericin B must be maintained.

While we try to battle this wave out, we should prepare for more such waves of COVID19, and escalation of other communicable diseases and other NCDs in future. Current efforts include a lot of *ad hoc* and temporary arrangements. The National policy should immediately make a provision to have an apex committee consisting of doctors, researchers, and epidemiologists, that has executive power to take and enable all medical related decisions for the country. Adequate budget should be allocated to this committee for any short- and long-term tasks to rebuild health infrastructure and augment existing resources. The focus should be more on strengthening primary and secondary health centres. Locally appropriate messages regarding correct lifestyle, diet and exercise must be disseminated at primary level of healthcare. High risk screening or NCDs must be done at this levels also. Funds should be adequate to ensure glucose meters, BP apparatus, electrocardiogram machines, metformin, simple antihypertensive drugs, statins, and aspirin at all primary health centers. Population covered by each center should have medical check at least once a year. At the same time, critical care facilities in 2nd and 3rd tier towns should be enhanced to tackle any future COVID19 wave and other epidemics/disasters. Experience from COVID19 pandemic has taught us that this two-pronged plan to buttress opposite ends of health-care should be given prime importance. For prevention and management, both communicable and non-communicable diseases should be given equal importance. A master blueprint and efforts

to put all plans to ground must be started now. A willful, dedicated and consistent approach would make it successful.

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Anoop Misra^{a,b,c}

^a National Diabetes, Obesity and Cholesterol Foundation (N-DOC),
New Delhi, India

^b Diabetes Foundation (India), New Delhi, India

^c Fortis C-DOC Center for Excellence for Diabetes, Metabolic Diseases
and Endocrinology, New Delhi, India
E-mail address: anoopmisra@gmail.com.