

## Diabetes Mellitus and Post-COVID 19 Syndrome: is it a Metabolic Risk Period?

Maria Paz Bolano-Romero<sup>1\*</sup>, Yenny Alexandra Moreno-Giraldo<sup>2</sup>, John Fredys Bello-Cordero<sup>3</sup>, Rafael Ricardo Ramirez-Morales<sup>4</sup> and Luis Fernando Caicedo-Delgado<sup>5</sup>

<sup>1</sup>Department of Biomedicine, Applied to Clinical Sciences, University of Cartagena, Cartagena, Colombia

<sup>2</sup>Department of Medicine, Pedagogical and Technological University of Colombia, Tunja, Colombia

<sup>3</sup>Department of Medicine, University Foundation of Health Sciences, Bogota, Colombia

<sup>4</sup>Department of Medicine, Universidad El Bosque, Bogotá, Colombia

<sup>5</sup>Department of Medicine, Universidad San Martin, Pasto, Colombia

\*Corresponding author: Maria Paz Bolano-Romero, Department of Biomedicine, Applied to Clinical Sciences, University of Cartagena, Cartagena, Colombia, Tel: 573215542500; E-mail: mbolanor1@unicartagena.edu.co

Received: February 18, 2022, Manuscript No. IPADM-22-11493; Editor assigned: February 21, 2022, PreQC No. IPADM-22-11493 (PQ); Reviewed: March 07, 2022, QC No. IPADM-22-1493; Revised: March 11, 2022, Manuscript No. IPADM-22-11493 (R); Published: March 18, 2022, DOI: 10.36648/1698-9465.22.18.1490

Citation: Bolano-Romero MP, Moreno-Giraldo YA, Bello-Cordero JF, Ramirez-Morales RR, Caicedo-Delgado LF, et al. (2022) Diabetes Mellitus and Post-COVID 19 Syndrome: is it a Metabolic Risk Period? Arch de Medi Vol:18 No:1

### Introduction

The COVID-19 pandemic has substantially impacted all fields of medicine globally. The control of chronic non-communicable diseases has been one of the greatest challenges due to the difficulties for the return of face-to-face attendance, the barriers to access health services and the fear of the community to go to medical assistance centers [1-2]. Diabetes mellitus is one of the most prevalent chronic non-communicable diseases in the world, generating the greatest number of complications, increasing the risk of morbidity, mortality and disability [3-4]. Strict adherence to permanent therapeutic plans is one of the greatest challenges for its control, and in the current pandemic where in many parts of the world drugs were scarce and it was not possible to go to pharmacies or hospitals, a worrying lack of control was observed. Moreover, those patients with diabetes mellitus who developed COVID-19 had a significantly increased risk of developing a severe phenotype and dying [4].

However, it was later observed that the acute phase of COVID-19 is not the only concern, but also the post-COVID-19 syndrome phase. Post-COVID-19 syndrome is defined as the appearance or persistence of symptoms related to the target organ lesion during the acute phase of COVID-19, starting 3 weeks after the onset of symptoms and may persist for up to 3 months [5-6]. Studies have observed that during this phase, a considerable number of complications and deaths occur, even in young patients without comorbidities or risk factors [7]. Now, derived from the sequelae that may occur during the acute phase of COVID-19, there are several events that may contribute to the post-COVID-19 phase being a metabolic risk period [8-9]. The sequelae do not allow routine physical activity; 2. The socioeconomic conditions of each country or region do not allow; 3. During the acute phase of COVID-19 a persistent metabolic disorder is triggered; 4. The patient presents comorbidities prior to COVID-19 such as diabetes mellitus and obesity, which has suffered a significant sequela that does not allow adherence to treatment in an effective way.

Ghadamgahi, et al. conducted a prospective study comparing clinical outcomes and survival of diabetic patients with COVID-19 vs. non-diabetic patients, where they found that diabetes is an independent factor of mortality or 2.88 (95% CI: 1.80-4.69; P<0.01), therefore, also of clinical outcome and thus of target organ injury (risk factor for complication during post-COVID-19 syndrome) [1]. Another study, conducted by Ajele, et al. determined the prevalence of emotional dysregulation and depression in diabetic patients during the pandemic, observing that there is a direct and significant relationship between these disorders and the presence of diabetes mellitus ( $\beta=0.39$ , 95% CI (0.29, 0.48)), which theoretically intensify during and after suffering the disease [2].

Another major complication that shares an endocrine, infectious and neurological origin is mucormycosis during the post-COVID-19 phase, which can occur at the pulmonary, gastrointestinal or rhino-orbito-cerebral level [10]. India is the main focus of COVID-19-associated mucormycosis, which is an insidious but fatal and potentially disabling disease [10]. Much research remains to be done on post-COVID-19 syndrome and its relationship to persistent or de novo metabolic disorders [11]. However, for several reasons it is undoubtedly a metabolic risk period that increases the risk of death. As a strategy to counteract this problem, teams and centers specialized in the strict follow-up of patients with risk factors, and of those who during the acute phase have suffered evident target organ damage, can be created to detect early any complication and reduce the risk of decompensation and death.

### References

1. Ghadamgahi F, Tapak L, Bashirian S, Amiri R, Roshanaei G, et al. (2021) The effect of underlying diabetes disease on clinical outcome and survival in patients with Covid-19: a propensity score matching study. *J Diabetes Metab Disord* 30:1-9
2. Ajele WK, Oladejo TA, Akanni AA, Babalola OB (2021) Spiritual intelligence, mindfulness, emotional dysregulation, depression

- relationship with mental well-being among persons with diabetes during COVID-19 pandemic. *J Diabetes Metab Disord* 31:1-10
3. Mittal J, Ghosh A, Bhatt SP, Anoop S, Ansari IA, et al. (2021) High prevalence of post COVID-19 fatigue in patients with type 2 diabetes: A case-control study. *Diabetes Metab Syndr* 15:102-302
  4. Corrao S, Pinelli K, Vacca M, Raspanti M, Argano C, et al. (2021) Type 2 Diabetes Mellitus and COVID-19: A Narrative Review. *Front Endocrinol (Lausanne)* 12:609-470
  5. González-Herazo MA, Silva-Muñoz DC, Guevara-Martínez PA, Lozada-Martínez ID (2021) Post-COVID 19 Neurological Syndrome: a fresh challenge in neurological management. *Neurol Neurochir Pol* 55:413-414
  6. Camargo-Martínez W, Lozada-Martínez I, Escobar-Collazos A, Navarro-Coronado A, Moscote-Salazar L, et al. (2021) Post-COVID 19 neurological syndrome: Implications for sequelae's treatment. *J Clin Neurosci* 88:219-225
  7. Menges D, Ballouz T, Anagnostopoulos A, Aschmann HE, Domenghino A, et al. (2021) Burden of post-COVID-19 syndrome and implications for healthcare service planning: A population-based cohort study. *PLoS One* 16: 254-523
  8. Raveendran AV, Misra A (2021) Post COVID-19 Syndrome (Long COVID) and Diabetes: Challenges in Diagnosis and Management. *Diabetes Metab Syndr* 15:102-235
  9. Accili D (2021) Can COVID-19 cause diabetes? *Nature Metabolism* 3:123-125
  10. Heydarifard Z, Safaei M, Zadheidar S, Ehsan S, Shafiei-Jandaghi NZ, et al. (2021) Mucormycosis infection in severe COVID-19 patient with multiple underlying health conditions. *Clin Case Rep* 9:5009
  11. Laurenzi A, Caretto A, Molinari C, Mercalli A, Melzi R, et al. (2021) No evidence of long-term disruption of glycometabolic control after SARS-CoV-2 infection. *J Clin Endocrinol Metab* 792