

vs.  $59.0 \pm 17.2$ ); the improvement in relative-TIR was  $5.7 \pm 26.1\%$ . Initial higher mean glucose level, lower TIR, less time spent at  $<54$  mg/dl range, longer time spent at 180–250 mg/dl range, higher daily insulin dose and single parent household were associated with improved relative-TIR. Multiple regression logistic analysis demonstrated only initial lower TIR and single-parent household were significant, odds ratio: -0.506, (95%CI -0.99,-0.023),  $p=0.04$  and 13.82, (95%CI 0.621, 27.016),  $p=0.04$ , respectively.

**Conclusions:** Pediatric patients with T1D benefited from a telehealth visit during COVID-19. This modality and its benefit should be employed, and used in the future as well. However, this modality is not yet suitable for a considerable proportion of patients.

## Diabetes Mellitus and Glucose Metabolism

### COVID-19 AND DIABETES

#### *High Prevalence of Diabetes in Hospitalized Patients With COVID-19 and Its Association With Greater Severity of COVID-19 in Delhi, India*

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**Abstract:** India is home to 77 million people with diabetes and has a large number of COVID 19 cases, albeit with a low fatality ( $<1.5\%$ ). Little Indian data is available about the prevalence of diabetes in COVID 19 and its impact on outcomes. This observational prospective study (approved by the Institutional Ethics Committee) was carried out in a designated COVID facility, largely catering to middle and upper socioeconomic classes. A total of 401 (125 F, mean age 54 y, range 19–92 y) consecutive adults hospitalized with COVID-19 infection as proven by positive nasal swab for SARS-CoV2 by RT-PCR were included. Diabetes mellitus was diagnosed either by known history or  $HbA1c \geq 6.5\%$ . Severity was assessed using the WHO ordinal scale<sup>1</sup>. Clinical outcomes and markers of inflammation were compared between diabetes and non-diabetes groups. Out of 401 patients, 210 (52.4%) had either diabetes (189,47.1%) or hyperglycemia requiring insulin treatment (21, 5.2%). 152 (37.9%) reported known diabetes, and 37 (9.2%) had preexisting but undiagnosed diabetes ( $HbA1c \geq 6.5\%$ ). People with diabetes were significantly older (mean age 59.9 vs 47.7 y), and had a higher proportion of men (74.6 vs 63.7%), hypertension (58.7 vs 25%), CAD (13.8 vs 4.2%), and CKD (5.3 vs 0.9%) and a higher mean baseline severity score ( $3.4 \pm 0.7$  vs.  $3.2 \pm 0.5$ ,  $p=0.000$ ). The diabetes group had a higher number of severe cases (WHO scale  $\geq 5$ ) (20.1% vs 9%,  $p=0.002$ ) and higher mortality (6.3 vs 1.4%,  $p=0.015$ ). A higher proportion of the diabetes group required ICU admissions (24.3 vs 12.3%,  $p=0.002$ ), glucocorticoid therapy (78.3 vs 54.2%,  $p=0.000$ ), oxygen administration (53.4 vs 28.3%,  $p=0.000$ ), inotropic support (7.4 vs 2.4%,  $p=0.019$ ), and renal replacement therapy (3.7% vs 0,  $p=0.005$ ). The mean duration of hospital stay was higher for the diabetes group (10.4 vs 9.1 days,  $p=0.016$ ). Of those who died, 12/15 (80%) had diabetes. Baseline Hba1c ( $n=331$ ) showed a significant correlation with outcome severity scores ( $r$

0.136,  $p=0.013$ ). Markers of inflammatory response, CRP ( $41.0 \pm 4.4$  vs.  $19.4 \pm 3.8$ ,  $p=0.000$ ), ferritin ( $404.8 \pm 41.6$  vs.  $258.8 \pm 40.2$ ,  $p=0.012$ ), IL6 ( $65.5 \pm 11.6$  vs.  $26.9 \pm 4.4$ ,  $p=0.002$ ), LDH ( $321.8 \pm 10.1$  vs.  $286.8 \pm 8.4$ ,  $p=0.008$ ) were significantly higher in the diabetes group. Procalcitonin and D Dimer did not differ significantly. In conclusion, we report the highest prevalence of diabetes in a hospitalized COVID-19 population so far. The diabetes group had more severe disease and greater mortality. Baseline HbA1c correlated with poor outcomes. The comorbidities could have contributed to these poorer outcomes in the diabetes group. Strategies to improve outcomes in this pandemic it is imperative to include screening for and better control of diabetes.

**Reference:** <sup>1</sup>[https://www.who.int/blueprint/priority-diseases/key-action/COVID-19\\_Treatment\\_Trial\\_Design\\_Master\\_Protocol\\_synopsis\\_Final\\_18022020.pdf](https://www.who.int/blueprint/priority-diseases/key-action/COVID-19_Treatment_Trial_Design_Master_Protocol_synopsis_Final_18022020.pdf)

## Diabetes Mellitus and Glucose Metabolism

### COVID-19 AND DIABETES

#### *How Did Elderly T2D Patients Cope With the Quebec Covid-19 Lockdown*

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The Canadian city most affected by the first wave of the Covid-19 (CV19) pandemic was Montreal. Montreal was in lockdown (LD) from Mar 13- Jun 15, 2020. The elderly, diabetics, and the economically disadvantaged are among the groups most at risk of CV19 and the psychosocial effects of LD. We sought to ascertain the effect of the LD on the wellbeing of lower income elderly T2D pts. As we felt it unethical to do non-essential testing during a pandemic we relied on clinically available HbA1c's as surrogates for metabolic wellbeing. Most HbA1c's used reflect a high ( $r=0.91$ ) correlation with 3 month values for the time periods of interest. The study group was composed of 38 mostly elderly T2D pts. All pts lived alone or with similarly aged spouses in non-institutional settings in a lower middle class neighborhood of Montreal. None had organized domestic help from family or the community. None had documented acute medical episodes or medication changes between Jan and Sept 2020. None have conditions known to render HbA1c non reliable. Pts were interviewed by telephone to assess their overall coping with the LD. In particular they were questioned about medical issues, difficulties obtaining medications +/- groceries and psychological or social stress. HbA1c values between Jan 1 - Mar 15, 2020 and after Aug 25, 2020 (non LD values) and between Apr 20 - Aug 15, 2020 (LD values) were recorded. Differences in the recorded non LD and LD HbA1c's were compared and analyzed for the group as a whole, by gender, and by insulin use. There were 38 pts, 22 M 56–77 yrs (mean 72.1) and 16 F 41–90 yrs (mean 75.2), 89.5% (34/38) were  $> 65$  yrs. Ten M and 9 F were on insulin. No pt reported severe hypoglycemia or weight fluctuations. All claimed to be following public health guidelines. There were no significant differences (d) between the mean HbA1c's non LD compared to LD neither for the entire group (d= 0.2), M (d=0.2), F (d=0.2), insulin treated pts (d=0.3) nor those not treated with insulin