

indicated high severity generally requiring intubation/ICU care. The Pearson correlation coefficient was used for linear correlation analyses. Proportion for categorical values were compared using the Chi squared test, the means for continuous variables were compared using two-tailed t tests or one way ANOVA (with Tukey post-test) for comparisons involving more than two conditions. A multiple linear regression model was used to assess the contribution of different variables. Differences were considered statistically significant at  $p < 0.05$ . **Results:** Among 120 patients with an A1c, 55 (46%) patients had diabetes and 65 (54%) did not have diabetes. More patients with a high severity index were seen in the cohort with diabetes compared to those without diabetes (72% compared to 28%  $p = 0.004$ ). Univariate analyses revealed statistically significant positive correlations with higher COVID-19 severity and older age, BMI, and African American race. ANOVA analysis revealed a statistically significant difference between increasing BMI and worse severity category with a BMI mean of 29.3 kg/m<sup>2</sup> in the low severity category compared to 34.9 kg/m<sup>2</sup> in the moderate severity category ( $p = 0.006$ ). A multi-variate analysis adjusting for all variables revealed that A1c, older age and race were positively associated with higher COVID-19 severity. **Conclusion:** Increased A1c, older age and race are positively and independently associated with a higher COVID-19 severity index. Further research regarding the relationship between COVID-19 and these associations is urgently needed.

## Diabetes Mellitus and Glucose Metabolism

### COVID-19 AND DIABETES

#### *The Relationship Between Age, Gender, Race, Diabetes and Obesity on Clinical Outcomes in a Large Cohort of Patients Hospitalized for Covid-19 in Metropolitan Detroit*

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The Severe Acute Respiratory Syndrome Coronavirus-2 infection has resulted in a global pandemic with survival statistics 95–99%, however severe disease has been described. This is a retrospective cohort study of patients > age 18 admitted to Henry Ford Health System in Detroit from March 1 - June 1, 2020 for COVID-19 infection with aims to: 1. Determine the incidence of poor outcomes (mechanical ventilation (MV), ICU admission, death, and venous thromboembolism (VTE)), 2. Describe the clinical characteristics of this group, and 3. Evaluate relationships between demographics, diabetes mellitus (DM), obesity, and inflammatory markers on outcomes. We hypothesized that older age, male gender, African American ethnicity, DM, obesity, and elevated inflammatory markers would predict poor outcomes. 8751 inpatients were included, of whom 682 (7.79%) required MV, 867 (9.91%) were admitted to the ICU, 753 (8.6%) died, and 430 (4.91%) had VTE. 4447 (50.8%) were African American, 4951 (56.6%) female, 5152 (58.9%) > age 50, and 2068 (23.6%) had DM. Of those who had BMI and A1c recorded, 2556 (50.2%) had BMI >30 kg/m<sup>2</sup> and 1138 (74.3%) had A1c >5.7%. Analyses controlling for demographics and

comorbidities found that age and male gender were significant predictors of MV (OR = 1.031; CI= 1.025–1.037;  $P < 0.0001$ , OR =2.023; CI= 1.700–2.407;  $P < 0.0001$ ), ICU admission (OR 1.024; CI= 1.018–1.029;  $P < 0.0001$ , OR 1.824; CI= 1.561–2.130;  $P < 0.001$ ), death (OR 1.077; CI= 1.069–1.085;  $P < 0.0001$ , OR 1.823; CI= 1.521–2.185;  $P < 0.0001$ ), and VTE (OR 1.021; CI= 1.014–1.028;  $P < 0.001$ , OR 1.293; CI= 1.043–1.603;  $P = 0.0193$ ). African American, compared to Caucasian ethnicity, was significantly associated with MV (OR 1.437; CI= 1.131–1.825;  $P = 0.0009$ ) and ICU admission (OR 1.428; CI= 1.150–1.773;  $P = 0.0002$ ), but not VTE. African Americans had significantly lower odds of death relative to Caucasians (OR 0.765; CI=0.604–0.969;  $P = 0.0200$ ). DM predicted MV (OR 1.999; CI= 1.677–2.383;  $P < 0.0001$ ), ICU admission (OR 2.014; CI= 1.717–2.364;  $P < 0.0001$ ), death (OR 1.501; CI= 1.250–1.803;  $P < 0.0001$ ), and VTE (OR 1.468; CI= 1.171–1.840;  $P = 0.0009$ ). Obesity predicted MV (OR 1.540; CI= 1.284–1.847;  $P < 0.0001$ ) and ICU admission (OR 1.395; CI= 1.186–1.642;  $P < 0.0001$ ) but not death or VTE. All inflammatory markers (D-dimer, ferritin, CRP, IL-6 and procalcitonin) were significantly correlated with MV and death. 3 of the 5 markers were also predictive of both ICU admission and VTE. This large retrospective study of a diverse population with a significant proportion of African Americans highlights the importance of taking age, male gender, African American ethnicity, presence of DM and obesity into account when determining risk of poor outcomes. These results contribute to the growing data on disparities in health care which have become more evident during this pandemic and the need to address this when designing public policy.

## Diabetes Mellitus and Glucose Metabolism

### COVID-19 AND DIABETES

#### *Type II Diabetic Patients' Attitudes Toward Influenza and Covid-19 Vaccination*

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Influenza vaccination (fluv) is free and easily accessible to diabetics in Quebec. The importance of vaccination (v) during the Covid19 (CV19) pandemic has been widely discussed in the media. To ascertain the receptiveness of type 2 diabetics (T2D) to fluv during the CV19 pandemic and their acceptance of an eventual CV19 vaccine (CVv) we carried out telephone interviews with 34 unselected T2D pts in Montreal, Quebec post the 1<sup>st</sup> wave of CV19 in that region. Pts were asked if they planned taking the fluv and/or an eventual CVv, reasons for reticence to v, and attitudes toward and compliance with public health (PH) directives. They were also asked their primary source of health related information. Recent HbA1c and insulin use were recorded. Thirty four T2Ds were surveyed, 22 M 50–87 yrs (mean 69.2) and 12 F 49–84 yrs (mean 68.8). Eleven M and 5 F were on insulin. HbA1c ranged from 5.9–13.0 (mean 7.3). None of the pts had recently discussed v with a healthcare provider (HCP). One pt received his health related information from Facebook, the others from mainstream media. None had contraindications to v. None had been diagnosed