425 Clinical Outcomes of COVID-19 in Common Variable Immunodeficiency Patients

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RATIONALE: Patients with primary and secondary immunodeficiency disorders are at increased risk of worse outcomes in coronavirus disease 2019 (COVID-19). We describe clinical outcomes of COVID-19 in common variable immunodeficiency (CVID) compared to non-CVID using a population-based database.

METHODS: We queried the TriNetX COVID-19 Research Network (n=84,961,620) for patients with CVID on immunoglobulin replacement diagnosed with COVID-19 (01/20/2020-08/18/2021). COVID-19 was defined by an ICD-10 code specific for COVID-19 or a CPT code indicating a PCR+ and/or antigen test. Severe clinical outcomes defined by the U.S. CDC including 30-day risk of hospitalization, respiratory failure, intensive care, and death were described and compared to all those who met our COVID-19 definition in the database without a diagnosis of CVID (CPT D38). Underlying characteristics of patient cohorts were not controlled for due to small number of CVID records available for analysis.

RESULTS: We identified 1,150,925 patients with COVID-19 [mean age (±SD) 44.2 (21.3); % female, 54], of whom 188,733 (16%) required hospitalization, 118,315 (10%) were diagnosed with respiratory failure, 25,739 (2.2%) required intensive care, and 19,988 (1.7%) died. We identified 65 patients with CVID on immunoglobulin with COVID-19 [mean age (±SD), 49.5 (21); % female, 71], of whom 26 (40%) required hospitalization, 17 (26%) were diagnosed with respiratory failure, 4 (6%) required intensive care, and 4 (6%) died.

CONCLUSIONS: Population-based data indicate CVID patients may be at increased risk of worse clinical outcomes from COVID-19. Continued monitoring of clinical outcomes of immunocompromised patients is necessary to develop risk-modifying recommendations in the CVID patient population.

426 Allergic and Nonallergic Covid-19 Vaccine Adverse Reactions in Hospital Employees

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RATIONALE: Allergic and non-allergic adverse reactions (ARs) to Covid-19 vaccine (Cov19V) have been reported. Understanding the characteristics of Cov19V ARs, particularly those that are allergic in nature, may help us to better counsel patients who are at risk of developing a vaccine AR.

METHODS: We performed a retrospective chart review of ARs voluntarily reported to our Occupational Health Services following Cov19V at a multi-site academic medical center between December 2020-June 2021.

RESULTS: 464 Cov19V ARs among 71,281 vaccine doses given (0.65%) were reported. 57 ARs (12.3%) were determined to be allergic (10 after the second dose), 356 were nonallergic, and 51 (11.0%) were undetermined. Of the 47 first-dose allergic ARs, 30 (63.8%) received a second dose, 16 did not complete the vaccine series, and 1 had no data. 3 employees received an alternative Cov19V. Of the 356 nonallergic ARs, 110 were following second dose, 2 were following Janssen, and 4 had no data. 228 of first dose reactions (95.0%, 228/240) completed the vaccine series. 22/57 (38.6%) allergic ARs versus 38/356 (10.7%) nonallergic ARs required ER transfer. More allergic ARs were categorized as moderate/severe (80.7%, 46/57) than nonallergic ARs (66.3%, 236/356).

CONCLUSIONS: Cov19V ARs are extremely uncommon with nonallergic AR more common than allergic. A vast majority of ARs, allergic or nonallergic, are able to receive subsequent Cov19V. Employees with allergic ARs were less likely to receive a second Cov19V and more frequently required emergent medical evaluation compared to those with nonallergic ARs.

427 A Multicenter Assessment of Food Allergy Quality of Life in Adolescents and Caregivers in Relation to Anxiety and Depression during the COVID-19 Pandemic

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RATIONALE: To examine the relationship between food allergy (FA) quality of life (QoL) and anxiety/depression for FA adolescents and their caregivers during the COVID-19 pandemic.

METHODS: Structured telephone interviews of FA adolescents (13-17 years) and primary caregiver dyads (n=106) identified at two food allergy centers in Dallas, Texas, and Little Rock, Arkansas, from 07/2020-03/2021. Interviewer-administered questionnaires included FA QoL (FAQL), FA independent measure (FAIM), generalized anxiety disorder-7 (GAD-7), patient health questionaire-9 (PHQ-9), COVID-19 Exposure and Family Impact Scales (CEFIS, CEFIS-AYA), and demographic and medical history data. Two-sample t-tests were conducted to compare mean scores. Pearson correlation coefficients evaluated the correlation between two continuous variables.

RESULTS: Allergic adolescents with mild to severe depression (p=0.0006) or anxiety (p<0.0001) were more likely to have poorer QoL (FAQL). FAIM scores were significantly increased in adolescents with mild to severe anxiety (p=0.016) or depression (p=0.026). Adolescent CEFIS-AYA exposure score was not significantly correlated with FAQL (r=0.174, p=0.075), but a significant positive correlation was detected between caregiver CEFIS impact score and adolescent FAQL (r=0.394, p<0.0001). Adolescent FAQL was also positively correlated with either caregiver FAQL (r=0.501; p<0.0001) or caregiver FAIM (r=0.225; p=0.021).

CONCLUSIONS: Adolescent depression and anxiety and poor QoL are associated. Poor adolescent QoL is correlated with higher COVID-19 caregiver impact. Assessing the mental health of FA adolescents and caregivers along with the impact of COVID-19 is an important consideration in comprehensive food allergy management.

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