376. COVID-19 Severity in HIV+ Patients Receiving Tenofovir
Nora Homs, MD; Kendra Vermeulen, PharmD, AAHIVP; Mitchell Snyder, PharmD; David J. Cennimo, MD, FACP, FAAP, FIDSA; Alexandra Sonney, MD; "Rutgers New Jersey Medical School, Newark, New Jersey; "VA New Jersey Health Care System, East Orange, New Jersey

Session: P-12. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background: Early in the COVID-19 pandemic, tenofovir (TAF/TDF) was identified as a potential agent for SARS-CoV-2 due to binding to RNA-dependent RNA polymerase similarly to remdesivir. This led to the hypothesis that TAF/TDF may be lessening the severity and improving outcomes of COVID-19 infection.

COVID-19 Severity

Methods: Patients were identified by searching for HIV infection and SARS-CoV-2 PCR testing. Type of antiretroviral therapy (ART), CD4+ cell count, HIV viral load (VL), comorbidities, presenting symptoms, severity of COVID infection, and outcomes were analyzed. COVID disease was classified as mild, moderate, severe, or critical based on World Health Organization criteria. We primarily sought to determine the effect of TAF/TDF on the severity of COVID infection. The secondary endpoint was to determine the effect of low CD4 count and HIV VL on the severity of infection.

Results: 39 HIV+ patients were tested at least once for SARS-CoV2 by PCR at VA NJ Health Care System. 18 of 39 patients were PCR positive. In those, common presenting symptoms included: fever (15/18), cough (7/18), and lethargy/fatigue (6/18). 16 of the 39 HIV+ patients’ ART included TAF/TDF; 8 of 18 COVID+ and 8 of 21 COVID-. In the COVID+ group, 2 patients had CD4 count < 200 cells/mm^3, 3 patients had HIV VL>200, and 19 of 21 had at least 1 comorbidity. In the COVID+ group, 3 had CD4 count < 200 cells/mm^3, none had detectible HIV viremia, and all but one had comorbidities. Of COVID+ infections, 7 were mild, 3 moderate, 8 severe, and 5 patients died. 4 of the 5 patients that did not survive were in non-TAF/TDF group. All 3 patients with CD4 count < 200 cells/mm^3 had severe disease. 6 out of 8 patients developed mild disease in TAF/TDF group vs. 1 out of 10 patients in non-TAF/TDF group. 1 out of 8 and 7 out of 10 patients had severe or critical disease in TAF/TDF vs non-TAF/TDF groups respectively.

Conclusion: In this sample of 18 HIV+ patients with COVID-19 infection, patients receiving TAF/TDF were more likely to develop mild disease and have full recovery than those who were on TAF/TDF-free regimens (75% vs. 10% and 87.5% vs. 50%, respectively). Patients not on TAF/TDF-based regimens had a higher rate of developing severe and critical COVID-19 disease (40% vs. 0% and 30% vs. 12.5%, respectively).

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377. Diabetes as a prognostic factor for mortality in Coronavirus Disease 19 (COVID-19): a systematic review and meta-analysis comprising 18,506 patients
Natalia Chamorro-Pareja, MD; Dimitrios Karamanis, PhD; Phaedon D. Zavras, MD; Weiwa Li, MD; Priyanka Mathias, MD; Damianos Kokkinidis, MD; Leonidas Palaidimos, MD; Iacoboi Medical Center, Albert Einstein College of Medicine, Bronx, New York; "University of Piraeus, Athens, Attiki, Greece; "Memorial Sloan Kettering Cancer Center, New York, NY; "Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, New York

Session: P-12. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background: Diabetes Mellitus is one of the leading causes of morbidity and mortality in the world. Infectious diseases are more common and associated with worse outcomes among diabetics. Diabetes is considered a predictor of morbidity in patients with COVID-19.

Methods: Medline, Embase, Google Scholar, and medRxiv were systematically reviewed up to May 10th, 2020 for observational studies on diabetic adult populations hospitalized for COVID-19 and that assessed possible correlation between diabetes and mortality. A meta-analysis was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Heterogeneity among trials for each outcome was assessed with the I-squared test. Values < 25% indicated low, 25 to 70% moderate, and > 70% high heterogeneity. Egger test and funnel plots were used to assess for publication bias.

Results: Fourteen observational studies (12 retrospective and 2 prospective) met the prespecified criteria for inclusion in the analysis, including 18,506 patients (43% women): 3,713 diabetics (DM group) and 14,793 non-diabetics (no-DM group). The mean or median age was above 60 years in 12 studies. DM group had a higher risk of death compared to the no-DM group, heterogeneity was significant (OR: 1.65; 95% CI: 1.35–1.96; I^2 77.4%). Sensitivity analysis for US studies only also revealed a higher chance of death among the DM group (OR: 1.34; 95% CI: 1.04–1.85; I^2 73.7%).

Conclusion: In conclusion, death was 65% more likely among diabetic inpatients compared to non-diabetics. Further studies are needed to assess whether this association is independent or not, and to investigate to role of glucose control prior or during the disease.

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378. E-cigarette or Vaping Associated Lung Injury in the Time of COVID-19
Rachel D. Downey, MSN, RN, CNIS; Donald Murphy, MD; Marsol Fernandez, MD; Julia Sapozhnikov, PharmD; Sarmsinta Bhaduri, MD; "Ascension Texas- Dell Children's Medical Center, Austin, Texas; "Dell Children's Medical Center; University of Texas at Austin Dell Medical School, Austin, TX; "Ascension Texas- Dell Children's Medical Center of Central Texas and Dell Medical School at the University of Texas at Austin, Austin, Texas; "Dell Children's Medical Center, University of Texas at Austin Dell Medical School, Austin, TX

Session: P-12. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background: Pediatric providers have been caring for two new and similar respiratory illnesses: E-cigarette or vaping use associated lung injury (EVALI) beginning in 2019 and Coronavirus Disease 19 (COVID-19) in 2020. Similarities include prodrome, presentation, imaging, and laboratory testing. While EVALI often improves with steroid treatment, steroids can be detrimental early in the course of COVID-19.

Although a positive SARS CoV-2 polymerase chain reaction (PCR) test is helpful, this result does not definitively identify SARS CoV-2 as the primary cause of symptoms in patients with a history of vaping, as both processes may be coexistent. Coinfection with other infectious agents is commonly found in children with COVID-19 infection. This led to the hypothesis that TAF/TDF may be lessening the severity and improving outcomes of COVID-19 infection.

COVID-19 Infection Outcomes

Methods: Patients were identified by searching for HIV infection and SARS-CoV-2 PCR testing. Type of antiretroviral therapy (ART), CD4+ cell count, HIV viral load (VL), comorbidities, presenting symptoms, severity of COVID infection, and outcomes were analyzed. COVID disease was classified as mild, moderate, severe, or critical based on World Health Organization criteria. We primarily sought to determine the effect of TAF/TDF on the severity of COVID infection. The secondary endpoint was to determine the effect of low CD4 count and HIV VL on the severity of infection.

Results: 39 HIV+ patients were tested at least once for SARS-CoV2 by PCR at VA NJ Health Care System. 18 of 39 patients were PCR positive. In those, common presenting symptoms included: fever (15/18), cough (7/18), and lethargy/fatigue (6/18). 16 of the 39 HIV+ patients’ ART included TAF/TDF; 8 of 18 COVID+ and 8 of 21 COVID-. In the COVID+ group, 2 patients had CD4 count < 200 cells/mm^3, 3 patients had HIV VL>200, and 19 of 21 had at least 1 comorbidity. In the COVID+ group, 3 had CD4 count < 200 cells/mm^3, none had detectible HIV viremia, and all but one had comorbidities. Of COVID+ infections, 7 were mild, 3 moderate, 8 severe, and 5 patients died. 4 of the 5 patients that did not survive were in non-TAF/TDF group. All 3 patients with CD4 count < 200 cells/mm^3 had severe disease. 6 out of 8 patients developed mild disease in TAF/TDF group vs. 1 out of 10 patients in non-TAF/TDF group. 1 out of 8 and 7 out of 10 patients had severe or critical disease in TAF/TDF vs non-TAF/TDF groups respectively.

Conclusion: In conclusion, death was 65% more likely among diabetic inpatients compared to non-diabetics. Further studies are needed to assess whether this association is independent or not, and to investigate to role of glucose control prior or during the disease.

Disclosures: All Authors: No reported disclosures
vaping revealed a history of vaping in all EVALI cases; frequency reported varied from multiple times daily to remote use. Some cases with EVALI also had a significant psychiatric history, positive urine drug screen, or significant weight loss prior to hospitalization. Cases with EVALI and steroid treatment improved within days of treatment. In a review of literature, BAL sampling often reveals lipid pneumonia in EVALI cases, which would not be expected in COVID-19. Of note, the single case in our group tested did not have lipid pneumonia on bronchoalveolar lavage (BAL) cytology.

Conclusion: Presence of prolonged preceding weight loss, or BAL cytology could help differentiate these clinical states.

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379. Epidemiology of Antimicrobial Use Among SARS-CoV-2 Positive and Negative Admissions in the US: A Multicenter Evaluation
Laura A. Puzniak, PhD1; Kari A. Bauer, PharmD2; Lyn Finelli, DrPH3; MS4; Carisa De Anda, PharmD5; Pamela Moore, PharmD6; Kalvin Yu, MD7; Vikas Gupta, PharmD8; Merck & Co, Inc9, PharmD, Merck Research Laboratories (Employee) Pamela Moise, PharmD, Merck & Co Inc, (Employee) Lyn Finelli, DrPH, MS, Merck & Co Inc, (Employee) Carisa De Anda, PharmD, Merck & Co, Inc, (Employee) Laura Puzniak, PhD, Merck (Employee) Karri A. Bauer, PharmD (Employee) Vikas Gupta, PharmD (Employee)

Methods: Of 142,054 patients were tested for SARS-CoV-2 and 12% (n=17,075) were SARS-CoV-2 positive. SARS-CoV-2 negative and positive patients did not differ regarding presence of a positive bacterial culture. Total LOS, % ICU admission, and antimicrobial use among SARS-CoV-2 patients.

Results: Almost half of patients tested for SARS-CoV-2 were prescribed antimicrobials, with antimicrobial use higher among those with SARS-CoV-2, despite similar rates of positive cultures. On average, antimicrobials were prescribed within 10 hours from the time to admission among patients tested. These treatment patterns may highlight the difficulties in making treatment decisions and concerns over potential bacterial superinfection in SARS-CoV-2, but also indicate potential overuse of antimicrobials. Collateral damage from antimicrobial overuse include increase selection of antimicrobial resistance, adverse effects of drugs, and unnecessary treatment costs. It will be important to continue to evaluate the utilization and appropriateness of antimicrobial use among SARS-CoV-2 patients.

Disclosures: Laura A. Puzniak, PhD, Merck (Employee) Karri A. Bauer, PharmD; Merck Research Laboratories (Employee) Lyn Finelli, DrPH, MS, Merck & Co Inc, (Employee) Carisa De Anda, PharmD, Merck & Co, Inc, (Employee) Pamela Moise, PharmD, Merck & Co, Inc, (Employee) Laura Puzniak, PhD, Merck (Employee) Karri A. Bauer, PharmD (Employee)

380. First Reports of Salivary Gland Involvement in Corona Virus Disease 2019 Roopa Anmol singh, MD1; Elizabeth Keenan, CRNP2; Don Kannangara, MDS3, PhD, DTAMHLMCRC1; St Luke's Hospital Network, Bethlehem, Pennsylvania; 3 St Luke's Healthnetwork, Bethlehem, Pennsylvania; 3 St Luke's University Health Network, Bethlehem, PA

Session: P-12. COVID-19 Complications, Co-infections, and Clinical Outcomes
Background: Many viruses infect salivary glands. These include mumps, Epstein-Barr, herpes virus 6, parainfluenza, influenza, adenovirus, bocavirus and others. Almost all coronavirus disease 2019 (COVID-19) infected patients carry the virus in saliva. Salivary duct epithelium were the early target cells in macaque monkeys infected with severe acute respiratory syndrome coronavirus (SARS-CoV). Here we present 2 COVID-19 cases with the involvement of salivary glands. Salivary gland involvement has not been reported in COVID-19.

Methods: We followed the COVID 19 clinical findings in a Pennsylvania long term care facility with 190 residents. Thirty tested polymerase chain reaction (PCR) positive. However, 48 were presumed infected. Eighteen likely cases were not tested due to shortage of swabs. Thirty four employees also tested positive. Two out of 48 patients aged 78 and 88 developed unilateral sialadenitis during the course of the illness. Both were Hispanic females. We studied the Clinical presentations, co-morbidities, lab and imaging results and the outcome.

Results: Case 1: Two days after the first confirmed case, a 88 year old Hispanic female developed fever and fatigue and tested COVID-19 positive. Fever lasted 5 days. Twenty days later the patient developed a 5x3 cm tender left parotid mass and hyponxia treated with oxygen via nasal cannula. (Table 1) Case 2: A 78 year old Hispanic female developed high fever and cough 7 days after the index case. Six days later she had persistent fever and presented with a tender 8.5x3.5 cm right submandibular mass. The patient was intubated for 3 days to protect the airway due to the size of the mass. Both made an uneventful recovery. (Table 1 and Figure 1)

Conclusion: New clinical findings of COVID-19 have been gradually added during the course of the pandemic. The virus is almost universally present in the saliva. In experimental Chinese macaques with SARS-CoV early target cells were the salivary duct epithelium. Salivary gland inflammation and swelling should be included amongst the clinical features of COVID-19.

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