376. COVID-19 Severity in HIV+ Patients Receiving Tenofovir

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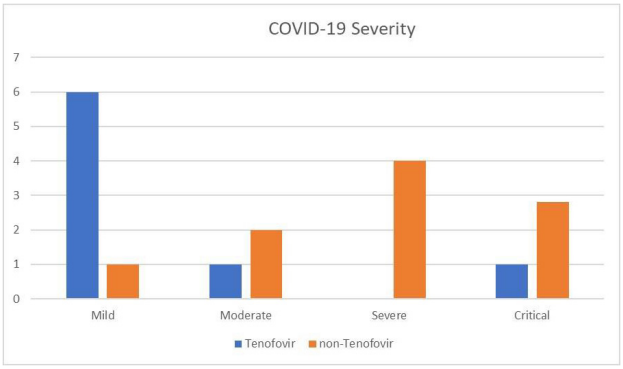
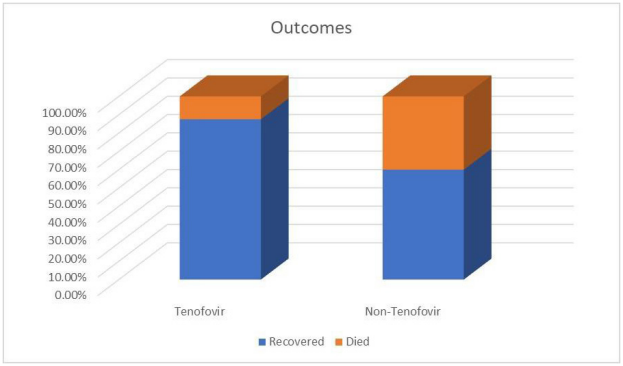
Session: P-12. COVID-19 Complications, Co-infections, and Clinical Outcomes

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



COVID-19 Infection Outcomes



Methods: Patients were identified by searching for HIV infection and SARS-CoV2 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

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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

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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, and the majority of children with PCR positive SARS CoV-2 are asymptomatic or mildly symptomatic.

Methods: In hopes of better defining EVALI versus COVID-19 clinical syndromes, we reviewed charts of pediatric patients admitted to a freestanding children's hospital in Texas diagnosed with EVALI over a year period from June 1, 2019 and June 1, 2020. Cases were identified through a local patient registry. We compared findings in these cases with literature regarding pediatric patients with acute COVID-19 and EVALI. Variables included presenting symptoms, timing of symptoms, vital signs, imaging, and laboratory results.

Results: Twelve patients with EVALI diagnosis were included. Clinical presentation, imaging, and laboratory findings were similar to those described with acute COVID-19 and are included in figures 1 and 2. Repeated interviewing regarding