(97.24% CI, 44% to 96%; P = 0.002) in 583 patients. In the final intention-to-treat analysis (N = 1057), the adjusted relative risk reduction was 79% (95% CI, 50% to 91%; p< 0.001) through Day 29 in recipients of sotrovimab (n=528) vs. placebo (n=529). Treatment with sotrovimab (ITT) resulted in a numerical reduction in the need for ER visits for illness management, hospitalization for acute illness management (any duration) or death (any cause) compared to placebo. No participants on sotrovimab required ICU admission, compared to 9 participants on placebo, of whom 4 participants required mechanical ventilation. No participants who received sotrovimab died, compared to 4 participants on placebo. The incidence of adverse events was similar between treatment arms and SAEs were numerically more common in the placebo arm.

Conclusion. Treatment with sotrovimab 500 mg IV resulted in a clinically and statistically significant reduction in progression of COVID-19 to hospitalization or death in patients with mild/moderate disease and was well-tolerated.

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503. In vitro Evaluation of Sitagliptin-HIV-1 Trans-activator Transcription Peptide Nano-formula for Antiviral Activity Against SARS-CoV-2: Drug Repurposing Approach

Khalid Eljaaly, PharmD, MS, BCPS, BCIDP[1]; Hani Asfour, PhD[1]; Tarek Ibrahim, PhD[1]; Osama Ahmed, PhD[1]; Nabil Alhakamy, PhD[1]; Usama Fahmy, PhD[1]; Mohammed Al-Rabia, PhD[1]; Ahmed Aloafi, PhD[1]; Mohamed Tantawy, PhD[1]; Khulood Hussein, PhD[1]; Ahmed Aldarmani, PhD[1]; Mahmoud Elfaky, PhD[1]; [1]King Abdulaziz University, Jeddah, Makkah, Saudi Arabia

Session: P-24. COVID-19 Treatment

Background. The outbreak of COVID-19 pandemic in China regarded as a major health/economic hazard. The importance of coming up with mechanisms for preventing or treating COVID-19 has been felt across the world. This work aimed at examining the efficiency of Sitagliptin (SIT) and human immunodeficiency virus type 1 (HIV-1) trans-activator transcription peptide (TAT) against SARS-CoV-2.

Methods. SIT-TAT nano-conjugates were prepared according to a full three-factor bi-level (2^3) factorial design. SIT concentration (mM, X1), TAT concentration (mM, X2), and pH (X3) were selected as the factors. Particle size (nm, Y1) and zeta potential (mV, Y2) were assessed as responses. Characterization of the optimized formula for Fourier-transformed infrared (FTIR) and Transmission electron microscope was carried out. In addition, IC50 in Vero E6 cells, In vitro 3CL-protease inhibition and docking tests were investigated.

Results. The prepared complex's formula was as follows 1: 1 SIT: TAT molar ratio, whereas zeta potential and particle size values were at 34.17 mV and 97.19 nm, respectively. This combination did exhibit its antiviral potentiality against SARS-CoV-2 via IC50 values of 9.083 5.415, and 16.14 μM for TAT, SIT-TAT, and SIT, respectively. In addition, the complex SIT-TAT showed a significant (P < 0.001) viral-3CL-protease inhibitory effect (IC50 = 3.959 μM ± 0.011) in comparison to isolated components (IC50 = 10.93 μM ± 0.25) and TAT (IC50 = 8.128 μM ± 0.42). This was further confirmed via in silico study. Molecular docking investigation has shown promising binding affinity of the formula components towards SARS-CoV-2 main protease (3-CL).

Conclusion. While offering significant binding interactions with protein's key pocket residues, an optimized formulation of SIT-TAT could guarantee both the enhanced delivery to the target cells and the improved cellular uptake. The presented findings would guarantee further investigations regarding formula optimization against SARS-CoV-2.

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504. Case SEries: Nasal Antimicrobial Photodisinfection (APDT) as Treatment Protocol for Asymptomatic and Early Stage COVID-19 Patients

Jack Kolenda, MD[1]; Josepmaria Argemi, MD[2]; [1]University of Toronto, Oakville, Ontario, Canada; [2]Universidad de Navarra, Pamplona, Navarra, Spain

Session: P-24. COVID-19 Treatment

Background. Targeted reduction of SARS-CoV-2 viral load in the nose may mitigate the severity of lower tract respiratory disease as well as reduce hospitalization and mortality rates. Nasal Photodisinfection has been deployed for 10 years in Canadian hospitals reducing post-surgical infections. The objective of thiswork was to demonstrate effectiveness of APDT in early stage COVID-19 and asymptomatic carriers.

Methods. A cohort of 40 COVID-19 positive patients were treated with nasal photodisinfection (Steriwave) at a private clinic. All patients were previously identified by PCR as SARS-CoV-2 positive and admitted into the treatment cohort. BD rapid antigen nares testing was used before and after Photodisinfection treatment. Of the 40 patients, 13 were female and 27 were male. Age range was 9- 56 years of age. Treatment involved 3-4 applications of photosensitizer and 16-24 minutes per patient of treatment time. Patients were followed up within 24 hours, 48 hours as well as day 5 and 6 and day 10/11. Patients filled out a COVID-19 score card.

Results. Results demonstrated APDT was capable of significant and rapid viral load reduction in COVID-19 carriers. 100% of patients were converted from positive rapid antigen test to negative. 60% of patients reported fever resolution within 24 hours. Fever resolution occurred in 100% of patients within 48hours. Moreover, results demonstrated accelerated resolution of COVID-19 symptoms and significantly improved mental health benefits from reduction of COVID-19 related stress and anxiety. None of the patients experienced severe symptoms and no patients were hospitalized. Safety outcomes demonstrated no patient safety issues with only minor transient side effects (rhinorrhea, sneezing) observed. Moreover, the treatment procedure was pain-free and well tolerated by all patients.

Conclusion. Photodisinfection-based nasal decolonization anti-viral efficacy was demonstrated with improved outcomes for all patients treated in this case series. Significant rapid viral load reduction was confirmed by rapid antigen tests in all patients. More clinical studies are warranted in support of Photodisinfection based therapy for upper respiratory infections such as COVID-19.

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505. Impact of Remdesivir on SARS-CoV-2 Clearance in a Real-Life Setting: A Matched-Cohort Study

Vincenzo Spagnuolo, MD[1]; Marta Voarino, n/a[2]; Marco Tonelli, MD[3]; Laura Galli, MSc[4]; Andrea Poli, MSc[4]; Elena Bruzzesi, MD[1]; Sara Racca, MD[5]; Nicola Clementi, MD[3]; Chiara Oltolini, MD[4]; Moreno Tresoldi, MD[6]; Patrizia Rovere Querini, MD[7]; Lorenzo Dagna, MD[8]; Alberto Zangrillo, MD[9]; Fabio Ciceri, MD[10]; Massimo Clementi, MD[3]; Antonella Castagna, MD[11]; [1]Vita-Salute San Raffaele University; Unit of Infectious Diseases, IRCCS, San Raffaele Scientific Institute, Milan, Lombardia, Italy; [2]Vita-Salute San Raffaele University, Milan, Lombardia, Italy; [3]Vita Salute San Raffaele University; Unit of Microbiology and Virology, IRCCS San Raffaele Scientific Institute, Milan, Lombardia, Italy; [4]Unit of Infectious Diseases, IRCCS San Raffaele Scientific Institute, Milan, Lombardia, Italy; [5]Unit of Microbiology and Virology, IRCCS San Raffaele Scientific Institute, Milan, Lombardia, Italy; [6]General Medicine and Advanced Care Unit, IRCCS San Raffaele Scientific Institute, Milan, Lombardia, Italy; [7]Vita-Salute San Raffaele University; Internal Medicine, Diabetes, and Endocrinology Unit, IRCCS San Raffaele Scientific Institute, Milan, Lombardia, Italy; [8]Vita-Salute San Raffaele University; Unit of Immunology, Rheumatology, Allergy and Rare Diseases, IRCCS San Raffaele Scientific Institute, Milan, Lombardia, Italy; [9]Vita-Salute San Raffaele University; Anesthesia and Intensive Care Department, IRCCS San Raffaele Scientific Institute, Milan, Lombardia, Italy; [10]Vita-Salute San Raffaele University; Hematology and Bone Marrow Transplant Unit, IRCCS San Raffaele Scientific Institute, Milan, Lombardia, Italy; [11]IRCCS San Raffaele Hospital and Vita-Salute San Raffaele University, Milano, Lombardia, Italy

COVID-BioB Study Group

Session: P-24. COVID-19 Treatment

Background. Evidence regarding the impact of remdesivir (RDV) on SARS-CoV-2 viral clearance (VC) is scarce. Aim of this study was to compare VC timing in COVID-19 patients who received RDV with those who did not.

Methods. Matched-cohort study conducted (25 February 2020-15 April 2021) at the IRCSS San Raffaele, Milan, Italy. The study enrolled hospitalized patients with pneumonia and a SARS-CoV-2 positive nasopharyngeal swab (NPS) at admission and at least one NPS during follow-up. Follow-up started at hospital admission and ended at the date of the first negative NPS (within 30 days after discharge). Patients who received RDV (cases) and patients who did not (controls) were matched based on age (±5 years), sex and PaO_2/FiO_2 (P/F; ±10 mmHg) values at admission. NPS were analyzed with RT-PCR. Results described as median (IQR) or frequency (%). Time to VC was estimated with Kaplan-Meier curve and compared with log-rank test.