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rate 109 per minute, oxygen saturation 90 %. The chest CT Scan showed multiple ground-glass opacities and the serological antibodies tests against SARS-CoV-2 were found positive for immunoglobulin M (IgM) and immunoglobulin G (IgG), confirming the diagnosis of COVID-19.

**Discussion:** Various medical conditions may mimic uncontrolled asthma. Patients unresponsive to asthma treatment should be evaluated for the presence of an asthma mimic, in this case COVID-19 infection. A chest CT Scan should be performed on the patient with serological virus specific IgG and IgM antibodies against SARS-CoV-2 to diagnosis COVID-19 despite the negativity of the RT-PCR assay. This case highlights the complexity and the multifaceted presentation of coronavirus disease 2019 (COVID-19).

## M409

### ELECTRONIC CIGARETTE OR VAPING PRODUCT USE-ASSOCIATED LUNG INJURY AMIDST THE COVID-19 PANDEMIC

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**Introduction:** Electronic cigarette or vaping product use-associated lung injury (EVALI) is currently a diagnosis of exclusion. Given the pro-inflammatory and partly immune-mediated pathogenesis, EVALI and SARS-CoV-2 infection share several clinical features, potentially posing a diagnostic challenge.

**Case Description:** A 24-year-old man without significant medical history presented with fever, worsening cough, dyspnea, vomiting and diarrhea during a local peak of COVID-19 cases. He required 10 liters of supplemental oxygen due to hypoxemic respiratory failure. Laboratory workup revealed: leukocytosis (ANC 15,200 cells/microliter), elevated ESR/CRP, ferritin-1030 ng/mL, d-dimer-791 ng/mL, procalcitonin-0.8 ng/mL, mild transaminitis, elevated IL-6 (173 pg/mL). Six nasopharyngeal PCR assays did not detect SARS-CoV-2 (2 prior to admission). Chest computed tomography delineated diffuse patchy ground glass opacities with shotty mediastinal and hilar lymphadenopathy. The working diagnosis was COVID-19 disease, however the patient subsequently admitted to frequent vaping of cannabis and THC-oils. He clinically improved after receiving antibiotics and steroids for treatment of EVALI.

**Discussion:** Similar to COVID-19, EVALI has a broad spectrum of pulmonary findings and may be accompanied by gastrointestinal or constitutional manifestations, elevated inflammatory markers and non-specific imaging. Leukocytosis with neutrophilic predominance is found in EVALI. The proposed immunopathology of lung damage in EVALI is via a cytokine cascade of IL-1, IL-6, and IL-13. COVID-19 may portend a detrimental cytokine storm syndrome. Elevated peripheral IL-6 levels can be detected in both diseases; this patient had a markedly elevated level suggesting a cytokine storm-like picture. The overall features of this case suggested EVALI, illustrating the importance of its consideration in the differential diagnosis of SARS-CoV-2 infection.

## M410

### COVID-19 INFECTION IN A PATIENT WITH SECONDARY HYPOGAMMAGLOBULINEMIA

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**Introduction:** We present a case of a 51-year-old male with hypogammaglobulinemia and COVID-19 infection.

**Case Description:** A 51-year-old male with hypogammaglobulinemia secondary to a history of diffuse large B-cell lymphoma treated with R-CHOP, presented to the ED after 3 weeks of fevers, myalgias and dyspnea in the setting of known COVID-19 infection. Labs revealed low IgG (despite IVIg infusion 3 days prior), elevated D-dimer, CRP, and a low lymphocyte count which was normal 1 month prior. Chest x-ray showed hazy bilateral opacities

concerning for atypical or viral pneumonia. On admission he required supplemental oxygen. He received IVIg (500 mg/kg), was started on therapeutic anticoagulation and enrolled into a clinical trial, which randomized giving hydroxychloroquine versus placebo. Throughout his hospital course he received convalescent plasma and two doses of methylprednisolone, meanwhile his oxygen requirements remained high. On day 12 of admission, he was found with abdominal pain and severe hypotension, and an abdominal/pelvic CT revealed a new retroperitoneal bleed. He required intubation, ICU-level care, initiation of vasopressors and a massive transfusion protocol. Despite these measures, he rapidly decompensated approximately 45 days after initial diagnosis and died.

**Discussion:** Fill et al hypothesized a cell-mediated response as being more important than a humoral response. Maybe our patient's earlier history of malignancy, specifically having developed DLCL, disrupted his T-cell response beyond ability in fighting against COVID-19. Additionally, the benefits of the treatments he received have not yet been fully demonstrated. As further studies and understanding emerges, hopefully more answers will be provided.

## M411

### ACTIVE TUBERCULOSIS (TB) MASQUERADING AS AN ASTHMA EXACERBATION DURING A SARS-COV-2 (COVID 19) PANDEMIC

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**Introduction:** TB rarely presents as asthma. Clinical symptoms of COVID-19 and asthma can mask a diagnosis of TB.

**Case Description:** A sixty-year old male presented to the allergy clinic in the spring of 2019 complaining of nasal congestion and cough associated with shortness of breath. Skin prick testing confirmed tree pollen allergy. The patient was treated for seasonal asthma and allergic rhinitis with nasal fluticasone spray, montelukast and inhaled albuterol. His symptoms improved, and he did well until this spring, when he contacted us with similar complaints without fever. Patient was evaluated at a televisit, medications were renewed and he was referred for COVID 19 testing which was negative. Since cough and shortness of breath persisted he was prescribed prednisone for a possible asthma exacerbation and amoxicillin for sinusitis. The patient did not improve and was seen in person. He was diaphoretic but not febrile or hypoxic. Twenty pounds of unintentional weight loss was recorded, the rest of exam was not contributory. Chest X-ray revealed bilateral pneumonia in upper lung lobes and laboratory data was significant for leukocytosis with lymphopenia, increased inflammatory markers and positive quantiferon. Repeated COVID-19 test was negative. Sputum revealed Mycobacterium Tuberculosis. Patient was treated for TB and improved.

**Conclusion:** Physicians must be mindful of the rare possibility of TB in patients who present as COVID-19 associated respiratory symptoms or asthma exacerbation. Prompt diagnosis and treatment of TB is crucial for the affected individual and community.

## M412

### A BALANCING ACT: TREATMENT OF COVID-19 AND CYTOMEGALOVIRUS IN A PATIENT WITH PRIMARY IMMUNODEFICIENCY

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**Introduction:** Treatment for SARS-CoV-2 has targeted both the infection, and also inflammatory complications of Coronavirus Disease 2019 (COVID-19). Attempts to control associated hyperinflammation can cause significant co-morbidities. Specifically, immunomodulation in the setting of COVID-19 can result in co-infection with other pathogens.

**Case Presentation:** A 14-year-old female with combined immunodeficiency secondary to NFx2 haploinsufficiency (p.R853x) complicated by alopecia totalis, granulomatous dermatitis,