**Method.** Bone marrow derived macrophages were isolated from wildtype (C57BL/6) or C3aR1/-/- mice. Coccidioides posadaii Seilvere arthroconidia were used in all experiments. Macrophage phagocytosis of arthroconidia was examined by conventional microscopy using a dual staining approach, incubating macrophages with FITC-labelled arthroconidia at a multiplicity of infection (MOI) of 1 (1 arthroconidium for every 1 macrophage) at each time point by light microscopy over 72hrs. All experiments were conducted at 37°C and 5% CO2.

**Results.** We show that by 1 hr of infection, half of all macrophages have intra-cellular arthroconidia, with phagocytosis occurring as quickly as at 15 min. The host receptor C3aR1 at a receptor density of 2250 RSV per macrophage was generally up-regulated upon phagocytosis of arthroconidia. In macrophages lacking C3aR1, 10% of macrophages had phagocytosed arthroconidia compared to 45% in wild type cells. We next observed that the presence of macrophages strongly promotes the ability of arthroconidum to transition to spherules at temperatures that would normally promote significant phagocytosis in vitro. Small spherules were observed within macrophages, in addition to larger extracellular spherules.

**Conclusion.** This work shows that macrophages phagocytose arthroconidia, yet in the presence of macrophages, some arthroconidia are able to develop into the pathogenic host form of Coccidioides. We have created a foundation for better understanding the initial interactions between key host immune cells and the inhaled form of the Coccidioides. We are currently using transcriptional profiling to identify and characterize the genes that play roles in the macrophage response to Coccidioides in vitro as arthroconidum develops into spherules.

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**#44**

**COVID-19 among pediatric patients with pre-existing pulmonary conditions: Preliminary results from the Pediatric COVID-19 U.S. Registry.**

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**Background.** COVID-19 is a respiratory infection caused by SARS-CoV-2. Adults with pre-existing pulmonary conditions have been reported to be at higher risk of severe disease, but less is known about COVID-19 in pediatric patients with pre-existing pulmonary conditions. We sought to characterize the clinical course and outcomes of COVID-19 among pediatric patients with pre-existing pulmonary conditions in a national passive surveillance registry. COVID-19 related data were obtained from the Pediatric COVID-19 U.S. Registry, a passive surveillance registry of pediatric patients less than 21 years old diagnosed with COVID-19 at inpatient and outpatient facilities across the United States. Centers (n = 170) voluntarily submitted information abstracted from medical records at Days 7-28 and post-COVID-19 diagnosis. Of the 13,248 cases submitted to the registry, 2143 (16.2%) cases submitted both Days 7 and 28 surveys as well as completed survey questions related to pre-existing pulmonary conditions. Immunocompromised cases, cases missing Day 28 surveys and those missing pre-existing pulmonary condition survey data were excluded from this analysis (n = 11,005). Clinical characteristics were summarized descriptively, and chi-square tests (α=0.05) were used to compare COVID-19 clinical course and outcomes between those with and without pre-existing pulmonary conditions.

**Results.** Among the 2143 cases included, 1438 (67%) reported a pre-existing pulmonary condition. The majority were male (53.6%), white or Caucasian (41.7%) and non-Hispanic (62.5%). Pulmonary conditions reported included asthma/reactive airway disease (92%) followed by bronchopulmonary dysplasia (4%) and tracheostomy dependence (3%). Approximately one quarter (n=578) of patients with pulmonary conditions were hospitalized and 151 (13%) were admitted to the ICU. Ninety-six (6.7%) experienced respiratory failure, 63 (4%) required mechanical ventilation, and 1 (0.06%) death was reported related to COVID-19. Compared to cases with no pre-existing pulmonary conditions, those with pulmonary pre-existing conditions were significantly more likely to experience chest pain (p=0.05) most frequent symptom, muscle aches (10.3% vs 1.6%), dyspnea (27.3% vs 10.5%), cough (46.8% vs 30%), and fever (47% vs 34.8%). Patients with pre-existing pulmonary conditions were also more likely to be hospitalized for COVID-19 (26% vs 14.8%), admitted to intensive care unit (13% vs 5%) and to require progression to lobar or trach infection (4.1% vs 0.6%). These patients were also more likely to receive oxygen (18% vs 8.2%), steroid treatment (Day 0 to 7) (14% vs 7.7%), and IVIG (7% vs 4.6%).

**Conclusion.** When compared to those without pre-existing pulmonary conditions, our data suggests children with pre-existing pulmonary conditions and COVID-19 are more likely to present with symptomatic and severe disease. Future prospective research is needed to fully understand the impact of COVID-19 among this at-risk population.

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**#48**

**Stenotrophomonas maltophilia infection in the Neonatal Intensive Care Unit: A retrospective study of risk factors and outcome in a tertiary hospital in New York State.**

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**Background.** Stenotrophomonas maltophilia (S maltophilia) remains an important nosocomial gram-negative bacillus on the rise with limited studies in the neonatal population. The aim of the present study was to review the risk factors and outcomes of S maltophilia infections in the level 3 neonatal intensive care unit (NICU) of a tertiary hospital in Brooklyn, New York City.

**Method.** A retrospective review and analysis of electronic medical records of patients admitted to NICU with culture positive S maltophilia and matched controls. Data was collected in a period of 12 years from 2008-2020 was carried out. The JMP 10.0 (SAS Institute Inc., Cary, NC, USA) software package was used for data analyses. T-test was used to determine if there was a significant difference between the data of interest among cases and controls. Values of p <0.05 were considered statistically significant.