overall incidence of confirmed bacterial coinfection in non-critically ill patients hospitalized with COVID-19 was low.

Disclosures. Kiya D. Mohadjer, PharmD, BCPS, BCIDP, Eli Lilly and Company (Shareholder) Gilead Sciences (Shareholder)

326. Radiologic Findings of COVID-19 Associated Mucormycosis (CAM) from India

Aswath Govindaraju, MBBS, DMRD, DNB; Deepthi H Vijayakumar, MBBS, DMRD, DNB; Raghavendra Tirupathi, MD, FACP; Jaffar A. Al-Tawfiq, MD, FIDSA; Ali A. Rabaan, PhD; Sparsh Superspecialty Hospital, Bangalore, Bengaluru, Karnataka, India; Columbia Asia Referral Hospital, Bangalore, Bengaluru, Karnataka, India; WellSpan Health, Chambersburg, Pennsylvania; Johns Hopkins school of medicine, Dhahran, Al Bahah, Saudi Arabia; Johns Hopkins Aramco Health Care, Dhahran, Al Bahah, Saudi Arabia

Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. The unique feature of the second wave of the COVID-19 pandemic in India has been the alarming surge of acute invasive fungal infection among COVID-19 patients. The increased incidence of rhino-orbito-cerebral mucormycosis is a matter of concern, as this fulminant infection has high morbidity and mortality. Hence, it is imperative to understand its imaging features, for early diagnosis, staging and treatment.

Methods. We systematically reviewed 32 COVID-19 cases with imaging diagnosis of acute invasive fungal rhino-sinusitis or rhino-orbital-cerebral disease between March to May 2021. These patients underwent contrast MRI of the paranasal sinus, orbit and brain. Contrast enhanced CT chest and paranasal sinuses were done as needed.

Results. The age group ranged between 30 to 71 yrs with male preponderance. The most common predisposing factors were intravenous steroid therapy and supplemental oxygen. All cases were confirmed by fungal culture and most common was Mucor. The rhino-orbito-cerebral mucormycosis was staged as below

| Stage | No. of cases |
|-------|-------------|
| 1 (Limited to nasal cavity) | 2 |
| 2 (Involving Paranasal sinuses) | 14 |
| 3 (Involvement of orbit) | 8 |
| 4 (Involvement of CNS) | 8 |

In our study we found that the most common site in the nasal cavity was the middle turbinate /meatus and the earliest sign was non-enhancing / “black” turbinate. Premaxillary and retroantral fat necrosis was the earliest sign of soft tissue invasion. Spread via the sphenopalatine foramen and pterygopalatine fossa was more common than bony erosions. Orbital cellulitis and optic neuritis were the most common among stage 3 cases. Of patients with CNS involvement, the most common were cavernous sinus thrombosis and trigeminal neuritis. Two patients with pulmonary mucormycosis showed large necrotic cavity lesions, giving the characteristic “bird’s nest” appearance.

Conclusion. The mortality rate was 20% in our study. In our short term follow up, 30% of recovered patients had relapse on imaging due to incomplete clearance and partial antifungal treatment. High clinical suspicion and low imaging threshold are vital for early Mucormycosis detection in COVID-19 patients. Familiarity with early imaging signs is critical to prevent associated morbidity /mortality.

Figure 1. Black turbinate

Contrast enhanced coronal T1 FS images of paranasal sinuses shows necrotic non-enhancing right superior and middle turbinate(*)

Figure 2: Axial contrast enhanced T1 FS image showing necrotic non enhancing premaxillary (arrowhead) and retroantral fat (straight arrow) walled off by thin enhancing rim.

Figure 3: Contrast enhanced axial T1 FS images of paranasal sinuses shows necrotic non-enhancing left middle meatus spreading along sphenopalatine foramen in to pterygopalatine fossa (arrow head)

Figure 4: Contrast enhanced coronal T1 FS and diffusion weighted images shows necrotic non-enhancing left middle meatus with left orbital cellulitis (*) and optic neuritis (white arrow)
327. Assessment of Bacterial Co-infection Rates and Antibiotic Exposure in COVID-19 Patients

Adam J. Luetkemeyer, PharmD3; Nick Bennett, PharmD3; Laura Aragon, PharmD3; Jeannette Ploetz, PharmD3; Sarah E. Boyd, MD2; 1Saint Luke’s Hospital, Kansas City, Missouri; 3Saint Luke’s Health System, Kansas City, Missouri

Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. COVID-19 pandemic data suggest risk for bacterial co-infection upon hospital presentation remain extremely low. Despite low co-infection rates, antibiotics are prescribed for most patients. Current data are limited regarding institutional-specific change in antibiotic use over the course of the pandemic. Given the low rates of co-infections, Saint Luke’s Health System’s COVID-19 Treatment Taskforce developed a COVID-19 evaluation and treatment order set which included procalcitonin (PCT). As co-infection literature emerged, active education was provided, and order sets were modified to provide passive education regarding co-infection rates. We aimed to assess antibiotic practice changes as data and strategies to influence use evolved during the pandemic.

Methods. This was a multi-center, single health-system retrospective cohort study. Ten community hospitals and 1 academic medical center were included in analysis. Inclusion criteria were age ≥18 years, admitted during April or September 2020 and had a positive COVID-19 result on admission. Patients were excluded if they were readmitted for COVID-19 related issues. Both primary and secondary outcomes were analyzed from the first 7 days after admission. The primary outcome was rate of respiratory bacterial co-infections. This was determined through sputum and blood cultures, urinary antigens including Streptococcus pneumoniae and Legionella, and PCT. Secondary outcomes included rate of antibiotic use, antibiotic days of therapy (DOT), length of therapy, and antibiotic use trends.

Baseline Characteristics

Results. A total of 294 patients were included with 69 patients in April 2020 and 225 in September 2020. Primary and secondary results are shown in Table 2. Rate of culture-confirmed bacterial co-infection when examining April 2020 was 4.38% and 4.44 % in September 2020. Antibiotic uses, antibiotic DOT, and length of therapy were all significantly lower in September 2020 compared to April 2020.

Conclusion. Our results show bacterial co-infections were extremely low in our health system. Despite positive trends in antibiotic use, prescribing remained high. More targeted interventions to decrease antibiotic exposure in COVID-19 patients are needed.

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328. Bacteremia in Patients Hospitalized with Covid-19 Disease, Risk Factors, Impact of immunomodulator Therapy, Role of Inflammatory Markers, Antibiotic Use, and Outcomes: A Single Center Retrospective Study

Aleena Zahra, MD1, Bettina C. Fries, MD/FIDSA2, Bettina C. Fries, MD/FIDSA2; 1SUNY Stony Brook University Hospital, Stony Brook, New York; 2Stony Brook University Hospital, Stony Brook, NY

Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. Novel coronavirus 2019 (Covid19) caused by SARS-CoV2 can lead to significant morbidity and mortality. There is unclear association between Covid19 and bacteremia. Patient characteristics and outcomes are not well defined. This retrospective cohort study assessed this in patients with Covid19 and bacteremia.

Methods. Patients with Covid-19 admitted to a tertiary care suburban academic medical center (UH) were assessed retrospectively by EMR chart review for co-morbidities, pre and in hospital factors, and outcomes as defined below. Bacteremias grouped into gram-negative or gram-positive with collation of each unique bacterial species (Table 1).

Table 1: Blood Cultures, Isolated Organisms

| Total Blood Cultures | Gram Negative | Gram Positive |
|----------------------|----------------|--------------|
| 19                   | 17             | 2             |
| Staphylococcus aureus | KLEBSIELLA PNEUMONIAE | KLEBSIELLA OCHRONOSA |
| Staphylococcus epidermidis | KLEBSIELLA OCHRONOSA | KLEBSIELLA OCHRONOSA |
| Streptococcus salivarius | BACTERIOIDES VULGATUS GROUP | BACTERIOIDES BIFIDUS GROUP |
| Staphylococcus simulans | KLEBSIELLA PNEUMONIAE | KLEBSIELLA PNEUMONIAE |
| Staphylococcus lugdunensis | KLEBSIELLA PNEUMONIAE | KLEBSIELLA PNEUMONIAE |
| Streptococcus gordonii | KLEBSIELLA PNEUMONIAE | KLEBSIELLA PNEUMONIAE |
| Staphylococcus lugdunensis | KLEBSIELLA PNEUMONIAE | KLEBSIELLA PNEUMONIAE |
| Enterococcus faecalis | KLEBSIELLA PNEUMONIAE | KLEBSIELLA PNEUMONIAE |
| Streptococcus pneumoniae | KLEBSIELLA PNEUMONIAE | KLEBSIELLA PNEUMONIAE |
| Streptococcus viridans | KLEBSIELLA PNEUMONIAE | KLEBSIELLA PNEUMONIAE |

Results. Total 1398 patients with Covid19 hospitalized at UH during local peak of pandemic of whom 238 (17.02%) developed 264 bacteremias with gram-positive (244, 92.4%) and gram-negative organisms (20, 7.57%). Relevant characteristics (Table 2) 53% with immunomodulator therapy (steroids/Tocilizumab), mean length of stay 21.04 days (SEM ± 1.67) with day SARS-CoV2 PCR positivity 1.15 days from

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