

Conclusion. We found higher incidence of ICU admission, mechanical ventilation, and mortality among SARS-CoV-2 SOTR vs other respiratory viruses. To validate these results, multicenter study is warranted.

Disclosures. All Authors: No reported disclosures

1348. A Novel Host-Protein Signature Comprising TRAIL, IP-10 and CRP Differentiates Bacterial from Viral Infection in COPD Patients with Suspected Lower Respiratory Tract Infection

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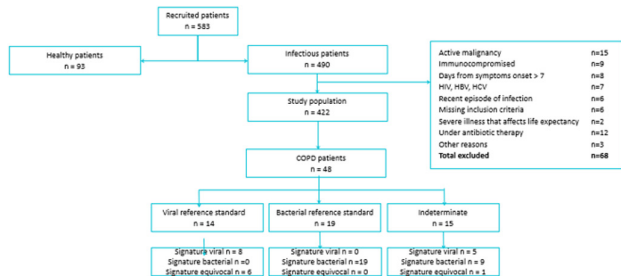
Session: P-74. Respiratory Infections - Viral

Background. Identifying infectious etiology is often challenging, yet essential for patient management, including antibiotic use. Studies have shown that a host signature comprising TNF-related apoptosis induced ligand (TRAIL), interferon gamma induced protein-10 (IP-10) and C-reactive protein (CRP) accurately differentiates bacterial from viral infection with negative predictive value >98%. Performance data was lacking in chronic obstructive pulmonary disease (COPD) patients with suspected lower respiratory tract infection (LRTI).

Methods. Adults aged >18 years with suspected LRTI were prospectively recruited at 3 medical centers (OBSERVER; grant #684589; NCT003011515). Reference standard infection etiology was adjudicated by 3 independent experts based on clinical, laboratory, microbiological, radiological and follow-up data. Host signature generates a bacterial likelihood score (0-100), providing three results: viral (0-35), equivocal (35-65) and bacterial (65-100). Experts were blinded to the signature result.

Results. Out of 583 adults recruited with suspected LRTI, 422 met infectious criteria, of whom 48 had a recorded history of COPD. 19 cases were adjudicated by the experts as bacterial, 14 as viral and 15 were indeterminate (Figure 1). The mean age was 68.2 years (standard deviation 12.3); 33 (68.8%) presented after two or more days of symptoms and 38 (79.2%) were hospitalized for a median of 6 days. 15 (31.2%) were female. For the patients adjudicated bacterial or viral labels (n=33), the discharge diagnoses were: COPD exacerbation, 12 cases (36.4%); pneumonia, 12 cases (36.4%) (3.0%); acute bronchitis, 2 cases (6.1%); upper RTI, 1 case; unspecified viral infection 1 case (3.0%); or other, 5 cases (15.2%). Host signature correctly classified all 19 bacterial cases and 8 of the viral cases, providing accurate etiology labels for 27/33 COPD patients with reference standard labels (81.8%). The remaining 6 viral cases received equivocal scores (18.2%).

COPD patient enrollment and etiology labels in the Observer study



Conclusion. Host signature accurately differentiates between bacterial and viral infections in patients with COPD history, supporting potential to improve management among these patients frequently admitted for RTIs.

Disclosures. Michal Stein, MeMed (Employee) Meital Paz, MD, MeMed (Employee) Tanya Gottlieb, PhD, MeMed (Employee, Shareholder) Eran Barash, MA, MeMed (Employee) Roy Navon, MSc, MeMed (Employee, Shareholder) Einat Moscoviz, BSc+ MBA, MeMed (Employee) Tahel Ilan Ber, MD, MeMed (Employee, Shareholder) Liran Shani, MD, MeMed (Employee) Olga Boico, PhD, MeMed (Employee) Einav Simon, PhD, MeMed (Employee, Shareholder) Noa Avni, PhD, MeMed (Employee) Kfir Oved, MD, PhD, MeMed (Board Member, Employee, Shareholder) Eran Eden, PhD, MeMed (Board Member, Employee, Shareholder)

1349. How Anchored is the Chancre? A Chart Review of Syphilis Treatment by a Safety Net Emergency Department in Atlanta, GA

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Session: P-75. Sexually Transmitted Infections

Background. Since reaching its nadir in 2000, syphilis has re-emerged as a public health threat in the U.S. The incidence of syphilis is disproportionately high in Atlanta, the epicenter of the HIV epidemic in the U.S. South. Given that syphilis infection is a strong predictor of HIV infection, identifying patients with syphilis is an important and underutilized method for connecting patients to HIV prevention and care services. Emergency departments (EDs) act as a critical access point to care in safety net health systems. We describe the recognition and empiric treatment of syphilis in the ED of Grady Healthcare System, a safety net hospital serving Atlanta.

Methods. We performed a retrospective chart review on all reactive rapid plasma reagin (RPR) tests collected from patients 18 years and older at the Grady ED from 5/1/20 to 10/31/20. We abstracted reported reason for testing, diagnosis, treatment administered, and location of treatment from the electronic health record.

Results. From 5/1/20 to 10/31/20, 148 patients with reactive RPR tests were identified. Reasons for testing were broad and included the evaluation of neurologic symptoms (47), genital/anal lesions (31), and a history of syphilis (18) (Table 1). 74 patients had presumed active syphilis (50%), 34 had previously treated syphilis (23%), 12 had false positives (8%), and 28 had an unclear diagnosis (19%) (Table 2). Of those with presumed primary syphilis who were discharged from the ED, 53% (8/15) received empiric treatment in the ED; 59% (10/17) of those with secondary syphilis received empiric treatment prior to discharge. Of the patients discharged from the ED, clinical follow up was indicated for 52% (31/59) given lack of empiric treatment or of confirmed prior treatment. Contact was attempted for 39% (12/31), but only 29% (9/31) were ultimately treated at Grady.

Table 1: Abstracted Reasons for Testing for Syphilis in the ED

Reason for Testing	Number of Patients	Percentage of Total
Stroke Workup	22	14.9%
Genital Lesion	20	13.5%
History of Syphilis	18	12.2%
AMS/Dementia Workup	17	11.5%
Rash	17	11.5%
HIV positive	14	9.5%
Other STI Symptoms	10	6.8%
Anal Lesion	10	6.8%
Patient Asked for Screening	9	6.1%
Other Neurologic Symptoms	8	5.4%
Lymphadenopathy	1	0.7%
Vision Changes	1	0.7%
Unknown	1	0.7%

For ED patients from 5/1/20-10/31/20 who had reactive RPRs, reasons for syphilis testing were taken from the chief complaint, history, or medical decision making documentation of ED providers, admitting providers, or consultants.

Table 2: Syphilis Diagnoses of ED patients with reactive RPRs

Syphilis Diagnosis by Chart Review	Number of Patients	Percentage of Total
Previously Treated Syphilis	34	22.8%
Unable to Determine	28	18.8%
Late Latent (or unknown duration)	25	16.1%
Primary Syphilis	15	10.1%
Secondary Syphilis	14	9.4%
Presumed False Positive	12	8.1%
Syphilis Proctitis	7	4.7%
Condylocoma Lata	3	2.0%
Early Latent	3	2.0%
Ocular Syphilis	2	1.4%
Meningovascular	2	1.4%
General Paresis	2	1.4%
Tabes Dorsalis	1	0.7%
Presumed & Unconfirmed Neurosyphilis	1	0.7%
Tertiary - Gummatous	1	0.7%

ED patients with a positive RPR from 5/1/20-10/31/20 were chart reviewed to determine their diagnosis. Previous RPR, treponemal antibodies, CSF results, media images, progress notes, and descriptions by medical staff were reviewed to attempt to retroactively determine the most likely syphilis diagnosis.

Conclusion. Reactive RPRs were common in this acute care setting and most represented active syphilis infection. Empiric treatment was most likely to be provided for patients with clear syphilis syndromes. However, a majority of patients who were discharged without empiric treatment did not receive follow up. Institutional protocols for following up reactive tests after discharge represent an opportunity to connect patients with syphilis treatment and HIV prevention services.

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