Compliance and performance characteristics of SCNS vs. HCWC for respiratory pathogens during 2019-2020 flu season.

Methods. Adult Military Health System (MHS) beneficiaries were enrolled in an influenza vaccine effectiveness trial (PAIVED). Following vaccination, subjects were instructed on SCNS and completion of a symptom diary and were contacted weekly to ascertain ILI symptoms (fever, sore throat, and/or cough). In the event of an ILI, subjects completed the symptom diary and SCNS and were scheduled a clinic visit for HCWC. Swabs were tested with the Luminex NxTAG® Respiratory Pathogen Panel. We evaluated compliance with swab collection, positive percent agreement (PPA) of SCNS using PCR detection from either HCWC or SCNS as the reference standard, and agreement between paired swabs using the Cohen Kappa coefficient (K).

Results. 1808 ILI were reported by 972 participants enrolled during the study period. Compliance with HCWC was higher than SCNS (58% [1042] vs. 42% [766]; p < 0.001). SCNS were associated with a shorter interval from symptom onset to specimen collection (mean: 4 days [IQR:2-6 days] vs. clinic collect: 7 days [IQR:4-9 days]; p < 0.001). 663 paired swabs were available for 609 participants (Table 1). The overall detection rate was higher in SCNS (36%) than HCWC (26%; p < 0.001) (Figure 1). The overall PPA was 85.7% and a PPA of approximately 80% of greater was observed for influenza, rhino/enterovirus, parainfluenza and respiratory syncytial virus. Agreement between paired swabs was poor due to the lower detection rates in HCWC.

Table 1. Demographics and swab collection data for 609 participants who provided 663 paired swabs

| Characteristic                  | N     |
|--------------------------------|-------|
| No. of paired swabs per unique participant (1 paired swab per ILD) |       |
| One                            | 560   |
| Two                            | 44    |
| Three                          | 5     |
| AGE                            |       |
| Median                         | 55.9  |
| Range                          | 19-83.9 |
| SEX                            |       |
| Female                         | 291   |
| Male                           | 318   |
| RACE/ETHNICITY                 |       |
| Black                          | 73    |
| Hispanic                       | 109   |
| White                          | 353   |
| Other                          | 74    |
| MILITARY STATUS                |       |
| Active Duty                    | 381   |
| Dependent                      | 131   |
| Retired                        | 97    |

Conclusion. SCNS were associated with higher detection rates compared to HCWC, likely due to the shorter interval between symptom onset and swab collection. Strategies to improve compliance with SCNS and minimize the interval between symptom onset and swab collection are needed to optimize detection of respiratory pathogens in this MHS cohort.

Disclosures. Ryan C. Maves, MD, EMD Serono (Advisor or Review Panel member); Heron Therapeutics (Advisor or Review Panel member) Jitu Modi, MD, GSK (Speaker’s Bureau)

678. Rapid Molecular SARS-CoV-2 Detection by Abbott ID NOW Is Reliable in Pediatric Patients

Catherine Murphy, MD1; Emily Sheboy Scarcello, MPH2; Sheila M. Nolan, MD, MSCE3; NYMC, Valhalla, New York; BCHP, Valhalla, New York; New York Medical College, Valhalla, New York

Session: P-31. Diagnostics: Virology

Background. The COVID-19 Pandemic demonstrated the importance of rapid, accurate, point of care testing to control spread of the virus. The availability of this testing has been crucial to re-opening schools, keeping children safely in schools, and returning children to school quickly following illness. The Abbott ID NOW molecular assay to detect SARS-CoV-2 was granted Emergency Use Authorization in March 2020. Reports of lower sensitivity compared with conventional PCR prompted some school districts to require confirmatory conventional PCR for negative rapid molecular results to return children to school. In this study we aim to determine the sensitivity and specificity of the Abbott ID NOW molecular SARS-CoV-2 test in a large pediatric primary care practice.

Methods. A retrospective observational study was performed using data from 25 pediatric primary care sites in the Boston Children’s Health Physicians network, a large multispecialty pediatric practice in New York and Connecticut. Data were extracted from the electronic health record for all patients 0-22 years of age who had an Abbott ID NOW rapid molecular COVID-19 assay from October 1, 2020 - February 28, 2021. For all patients with rapid tests, we identified patients who had a conventional PCR test sent within 1 day before or 1 day after the ID NOW test. The result of the conventional PCR test was considered the “true” result. All discrepant test results were identified.

Results. During the study period, 14993 patients had ID NOW testing performed. The percent positivity was 8.5%. The percent positivity in our practices paralleled that in the surrounding community throughout the winter surge of COVID-19. 500 patients had confirmatory testing sent within 1 day before or after the ID NOW test (15 positive and 485 negative results). Based on the conventional PCR test results, 2 of 15 positive results were false positive and only 1 of 485 negative results was false negative, resulting in a sensitivity of 93% and specificity of 99.6%. The false negative result was in a patient with nasal congestion whose mother was COVID positive.

Conclusion. Rapid, molecular, point of care testing is an important tool to identify SARS-CoV-2 in pediatric patients and limit school absences. The ID NOW assay is highly sensitive and specific in a real-world pediatric setting.

Disclosures. All Authors: No reported disclosures

679. Infective Endocarditis and Septic Emboli-Related Complications: Epidemiology and Impacts on Hospital Outcomes.

Hansang Park, MD1; Monil Majmundar, MD; Soumyajit Roy, MD2; Maria Rosa Velasquez-Espiritu, MD3; Kuldeep Ghosh, MD; Khatuna Kadeshvil1, MD; Shobhana Chandhuri, MD; Eliana A. Lopez, MD; New York Medical College Metropolitan Hospital Center, Fort Lee, New Jersey; New York Medical College Metropolitan Hospital, New York, New York; NYCHHC Metropolitan NYMC, New York, New York

Session: P-32. Endocarditis

Background. Infectious endocarditis (IE) remains a disease of high mortality, complications and a severe burden to the healthcare system despite advances in diagnostic techniques and treatments. There are several investigations of IE using a nation-based population cohort, however, with limited focus on septic emboli-related complications.

Methods. We used the 2016 to 2018 National Readmission Database (NRD) to identify a primary diagnosis of admissions among adults (Age≥18) with IE. International Statistical Classification (ICD-10) codes were used to identify patients with a primary diagnosis of IE who experienced in-hospital septic emboli-related complications. Primary outcomes were mortality, length of stay and total cost and 30-day all-cause readmission. Uni- and Multivariate Linear, Logistic and Cox regression were used to assess statistical significance and a two-sided p-value less than 0.05 was considered significant.

Methods. A retrospective observational study was performed using data from 25 pediatric primary care sites in the Boston Children’s Health Physicians network, a large multispecialty pediatric practice in New York and Connecticut. Data were extracted from the electronic health record for all patients 0-22 years of age who had an Abbott ID NOW rapid molecular COVID-19 assay from October 1, 2020 - February 28, 2021. For all patients with rapid tests, we identified patients who had a conventional PCR test sent within 1 day before or 1 day after the ID NOW test. The result of the conventional PCR test was considered the “true” result. All discrepant test results were identified.

Results. During the study period, 14993 patients had ID NOW testing performed. The percent positivity was 8.5%. The percent positivity in our practices paralleled that in the surrounding community throughout the winter surge of COVID-19. 500 patients had confirmatory testing sent within 1 day before or after the ID NOW test (15 positive and 485 negative results). Based on the conventional PCR test results, 2 of 15 positive results were false positive and only 1 of 485 negative results was false negative, resulting in a sensitivity of 93% and specificity of 99.6%. The false negative result was in a patient with nasal congestion whose mother was COVID positive.

Conclusion. Rapid, molecular, point of care testing is an important tool to identify SARS-CoV-2 in pediatric patients and limit school absences. The ID NOW assay is highly sensitive and specific in a real-world pediatric setting.

Disclosures. All Authors: No reported disclosures

Figure 1. Flowchart of the study cohort. IE=Infective Endocarditis

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Results. A total of 30,870 patients were admitted with a primary diagnosis of IE from 2016 to 2018 (December admissions were omitted). After excluding the patients with omitted information, 30,289 patients went into analysis. Baseline characteristics are shown in Table 1. Septic emboli-related complications were seen in 42.6% of the patients; about 10% had central nervous system (CNS) complications, 7% had cardiac complications and 20.2% had respiratory complications. Embolic complications of any kind were associated with higher mortality (Odds Ratio = 2.11 [1.74 – 2.54]), a longer length of stay (5.72 days [5.17 – 6.27]) and higher total costs (21,812 dollars [19,856 – 23,769]) while adjusted for baseline characteristics. Multivariate Cox regression to assess the risk of 30-day readmission was not statistically significant. Predictors of 30-day all-cause readmission among baseline characteristics and subgroups of embolic complications are shown in table 4 and table 5, respectively.
Conclusion. The prevalence of septic emboli-related complications was up to 42.6% of patients admitted with the primary diagnosis of IE. These complications significantly impact hospital outcomes, including mortality, length of stay and total cost. Further studies are required to clarify the relationship between 30-day all-cause readmissions and embolic complications.

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680. Month Long Fungemia due to Candida auris Endocarditis
Haseeb Khan, MD1, Christy Varughese, PharmD2, Hemil Gonzalez, MD2; Rush University Medical Center, Chicago, Illinois

Session: P-32. Endocarditis

Background. Candida auris (C. auris) is a multidrug resistant Candida species, reported to cause persistent fungemia along with a multitude of invasive fungal infections. We report the first case of C. auris fungemia due to endocarditis.

Methods. 61 year old man with a history of diverticulitis that required sigmoid resection and was complicated by abdominal abscesses due to multi drug resistant organisms warranting heavy antibiotic. Prolonged hospitalisation for that surgery was followed by a stay at a long term acute care hospital. He was readmitted at an outside hospital with sepsis where blood cultures grew Cauris. Upon evaluation, was found to have aortic valve endocarditis. Per patient’s preference, surgery was initially deferred. Despite escalation of therapy with a combination of antifungals, he remained fungemic for five weeks with repeat blood cultures showing changing antifungal susceptibility patterns. Patient eventually underwent surgical intervention at our facility, with valve cultures being positive for Cauris. After the surgery he was treated with 6 weeks of intravenous combination antifungal therapy.

Results. C. auris pathogenicity stems from multiple mechanisms with multi drug resistance being the most pertinent. What adds to the complexity of the management is the absence of Cauris specific minimum inhibitory concentration breakpoints. Therefore treatment is based on Center for Disease Control’s (CDC) proposed breakpoints that have been extrapolated from other Candida spp. It is further complicated by lack of C. auris specific data showing essential agreement among different commercially available antifungal susceptibility testing (AFST). Heteroresistance of the microbial population is an issue that must be considered in such protracted fungemia.

Conclusion. Invasive infections due to Candida auris presents as a diagnostic and therapeutic challenge to clinicians.

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681. Penicillin Plus Ceftriaxone Against Enterococcus faecalis In Vitro Time-Kill Studies
Buhnazia Khan, PhD Candidate1, Zeel Shah, PhD Candidate2, Yonbidua Huang, PharmD, BS, MPH1,2,3, Jacyn Cusumano, PharmD3, BCIDP3; Long Island University, Brooklyn, New York; 2Western University College of Pharmacy - Glendale, Glendale, Arizona; 3Mount Sinai Queens Hospital, Queens, New York

Session: P-32. Endocarditis

Background. Synergistic ampicillin plus ceftriaxone (AC) for Enterococcus faecalis infective endocarditis outpatient use is precluded by ampicillin’s poor room temperature stability. Penicillin has superior stability and has been combined with ceftriaxone (PC), however there is a lack of studies to demonstrate synergy.

Methods. AC and PC were evaluated, in duplicate, for synergy utilizing 24-hour in vitro time-kill assays with a starting inoculum of 10^8 colony forming units (CFU)/mL. Six clinical E. faecalis blood isolates and one wild-type E. faecalis (H22-2) were included. All isolates were susceptible to ampicillin and penicillin, with minimum inhibitory concentrations (MICs) ranging from 0.5-1 µg/mL and 2-4 µg/mL, respectively. Ampicillin and penicillin were tested at subinhibitory concentrations (0.25x and 1x MIC) and a dose of 2g IV q12hr (MIC50/MIC90: 0.5/2 µg/mL). Ceftriaxone was tested at 0.5xMIC (MIC50/MIC90: 1/2 µg/mL), as all ceftriaxone MICs were high due to intrinsic resistance (MICs 128-2048 µg/mL). Synergy was defined as a decrease in bacterial density at 24 hours from the most active single agent.

Results. AC and PC did not demonstrate synergy against isolates with a higher penicillin MIC of 4 µg/mL. Further research is warranted to better understand PC synergy against E. faecalis.

Disclosures. All Authors: No reported disclosures