Conclusion. Candida species were more likely to be found in ICU patients with CLABSI as compared to non-ICU counterparts with further investigation in the ICU population revealing lack of flushing after administration of total parenteral nutrition. Otherwise, this observational cohort of CLABSI events did not identify any difference in immunosuppression status or line type. Given this information, infection prevention efforts will continue to be directed towards proper central line maintenance and removal when no longer indicated.

Disclosures. All Authors: No reported disclosures

770. Impact of COVID-19 Pandemic on Central Line-associated Bloodstream Infections in Metropolitan Detroit

Geehan Suleyman, MD1; Nicholas sturla, MD1; Smitha Gudipati, MD2; Indira Brar, MD3; Ramesh Mayur, MD1, 1Henry Ford Hospital, Detroit, Michigan; 2Henry Ford Health System, Detroit, Michigan

Session: P-37. HAI: Device-Associated (CLABSI, CAUTI, VAP)

Background. We observed an increase in central line-associated bloodstream infections (CLABSI) associated with the 2020 COVID-19 pandemic and performed a retrospective analysis to better understand the impact of COVID-19 on CLABSI rates.

Methods. This was a retrospective cross-sectional study comparing CLABSI rate per 1,000 central line days, blood culture (BC) utilization rate per 1,000 CL days, CL utilization rate per 1,000 patient days, Standardized Infection Ratio (SIR) and Standardized Utilization Ratio (SUR) in the pre-COVID-19 period from January 1, 2019 to December 31, 2019 to the COVID-19 period from April 1, 2020 to March 31, 2021 at an 877-bed tertiary care hospital in Detroit, Michigan. CLABSI, and BC and CL utilization rate were extracted from the electronic medical record (Epic® Bugsy). SIR and SUR data were extracted from National Healthcare Safety Network (NHSN).

Results. A comparison of CLABSI rates (displayed in infections/1000 catheter days) in all adult inpatients at our institution for calendar-years 2019 and 2020

A comparison of CLABSI rates (displayed in infections/1000 catheter days) in all adult inpatients at our institution for calendar-years 2019 and 2020

771. COVID-19 on the Line: A Significant Increase in CLABSI in Hospitalized Patients with COVID-19 at a Major Teaching Hospital

Pishoy Haroun, MD1; Michael Ben-Aderet, MD2; Meghan Madhusudhan, MPH3; Matthew J Almario, MPH JD1; Ryan C Raypon, MPH, MS5; Sharon E. Fawcett, MSN, RN, CIC2; Jonathan Grein, MD1, 1UCLA, Sherman Oaks, CA; 2Cedars-Sinai Medical Center, Los Angeles, CA; 3Cedars-Sinai Medical Center, Los Angeles, CA

Session: P-37. HAI: Device-Associated (CLABSI, CAUTI, VAP)

Background. Recent publications suggest that central line-associated bloodstream infection (CLABSI) rates have increased in US hospitals during the COVID-19 pandemic. The objective of this study was to evaluate the impact of COVID-19 pandemic on CLABSI.

Methods. This was a retrospective cross-sectional study comparing CLABSI rate per 1,000 central line (CL) days, blood culture (BC) utilization rate per 1,000 CL days, CL utilization rate per 1,000 patient days, Standardized Infection Ratio (SIR) and Standardized Utilization Ratio (SUR) in the pre-COVID-19 period from January 1, 2019 to December 31, 2019 to the COVID-19 period from April 1, 2020 to March 31, 2021 at an 877-bed tertiary care hospital in Detroit, Michigan. CLABSI, and BC and CL utilization rate were extracted from the electronic medical record (Epic® Bugsy). SIR and SUR data were extracted from National Healthcare Safety Network (NHSN).

Results. A comparison of CLABSI rates (displayed in infections/1000 catheter days) in all adult inpatients at our institution for calendar-years 2019 and 2020

A comparison of CLABSI rates (displayed in infections/1000 catheter days) in all adult inpatients at our institution for calendar-years 2019 and 2020

Conclusion. During the COVID-19 pandemic, there was a significant increase in CL utilization, CLABSI rate, SIR and SUR likely due to higher acuity in COVID-19 patients despite a decrease in BC orders.

Disclosures. All Authors: No reported disclosures

Table 2. Catheter / CLABSI Characteristics

| Line Days   | Median | Range      |
|-------------|--------|------------|
|             | 11     | 3 to 55    |

| Number | Percent (%) |
|--------|-------------|
|        |             |

| Line Type          | Number | Percent (%) |
|--------------------|--------|-------------|
| PIC                | 33     | 35.5        |
| CVC                | 32     | 34.4        |
| HD Catheter        | 32     | 35.5        |
| Port               | 16     | 17.2        |
| Pulmonary Artery Catheter | 10    | 11.9        |

| Reason for Line        | Number | Percent (%) |
|-----------------------|--------|-------------|
| Vasopressors          | 12     | 12.9        |
| Chemotherapy          | 24     | 25.8        |
| TPN                   | 7      | 7.5         |
| Antibiotics           | 1      | 1.1         |
| Dialysate            | 0      | 0.0         |
| Pulmonary Hypertension| 4      | 4.3         |
| Other Medications     | 19     | 20.4        |
| More Than One Reason  | 11     | 11.8        |

| Organism               | Number | Percent (%) |
|------------------------|--------|-------------|
| Staphylococcus aureus  | 17     | 18.3        |
| Other Gram-Positive species | 31   | 33.3        |
| Gram-Negative species  | 12     | 12.0        |
| Candida species        | 22     | 23.7        |
| Polymicrobial          | 11     | 11.8        |

Figure 1. CLABSI Rate and SIR from 2017 to 2020 by Quarter

Figure 2. CLABSI control chart pre-and during COVID-19 pandemic

Figure 1. CLABSI, blood culture utilization and central line utilization rates pre-and during COVID-19 pandemic

Figure 2. CLABSI control chart pre-and during COVID-19 pandemic

Conclusion. 771. COVID-19 on the Line: A Significant Increase in CLABSI in Hospitalized Patients with COVID-19 at a Major Teaching Hospital

During the COVID-19 pandemic, there was a significant increase in CL utilization, CLABSI rate, SIR and SUR likely due to higher acuity in COVID-19 patients despite a decrease in BC orders.

Disclosures. All Authors: No reported disclosures
Methods. Retrospective review was done for all CLABSI in adults meeting National Healthcare Safety Network (NHSN) criteria in 2020 at an 889-bed teaching hospital. CLABSI in encounters with PCR-confirmed COVID-19 (COVID CLABSI) were compared with CLABSI in encounters without a COVID diagnosis (non-COVID CLABSI). As a secondary analysis, we also reviewed all CLABSI occurrence in 2019. Characteristics were compared using Mid-P Exact (Poisson) and Chi Squared (categorical) Tests. Subjective data collected by infection preventionists during real-time case reviews with clinical staff of each CLABSI was also reviewed.

Results. In 2020, the rate of COVID CLABSI (CLABSI/1000 catheter days) was 6.6 times greater than the rate of non-COVID CLABSI (5.47 vs. 0.83, p< 0.001). In the COVID CLABSI group we observed higher rates of occurrence in the ICU setting (94% vs 28%, p< 0.001), in house mortality (53% vs 26% P=0.0187), presence of arterial lines (91% vs 20%, p< 0.001) and increased number of catheter lumens (4 vs 3, p< 0.001). No significant difference was observed in the distribution of pathogens. No significant differences were observed between 2019 CLABSI and 2020 non-COVID CLABSI. Real-time case reviews identified changes in nurse staffing, increased nurse: patient ratios, delays in routine central line dressing changes, and inconsistent use of alcohol-impregnated port protectors as possible contributing factors.

Table 1. 2020 COVID CLABSI vs 2020 non-COVID CLABSI

|                 | CY2020- COVID n=32 | CY2020- non-COVID n=46 | p-value |
|----------------|---------------------|-------------------------|---------|
| CLABSI Rate / 1000 central line days | 5.47 | 0.83 | <0.001 |
| Charlson Comorbidity Score (median) | 3.5 | 5 | 0.998 |
| In-hose mortality | 53% | 26% | 0.0187 |
| ICU CLABSI | 94% | 28% | <0.001 |
| Arterial line present on infection date | 91% | 20% | <0.001 |
| # Lumens on CLABSI infection date (median) | 4 | 3 | <0.001 |

A comparison of selected patient and catheter characteristics in COVID CLABSI vs non-COVID CLABSI in 2020.

Table 2. 2019 CLABSI vs 2020 non-COVID CLABSI

|                 | CY2019 n=39 | CY2020- non-COVID n=46 | p-value |
|----------------|-------------|-------------------------|---------|
| CLABSI Rate / 1000 central line days | 0.62 | 0.83 | 0.1967 |
| Charlson Comorbidity Score (median) | 7 | 5 | 0.130 |
| In-house mortality | 38% | 26% | 0.2496 |
| ICU CLABSI | 44% | 28% | 0.743 |
| Arterial line present on infection date | 23% | 20% | 0.7021 |
| # Lumens on CLABSI infection date (median) | 2 | 3 | 0.631 |

A comparison of selected patient and catheter characteristics in CLABSI in 2019 vs non-COVID CLABSI in 2020.

Figure 2. CLABSI rate in 2019 vs COVID CLABSI and non-COVID CLABSI in 2020

A comparison of CLABSI rates (displayed in infections/1000 catheter days) in all adult inpatients at our institution for calendar years 2019 and 2020, with the infections in 2020 divided into those that occurred during an encounter with a PCR-confirmed diagnosis of COVID-19 and those without.

Conclusion. We observed a dramatically higher rate of CLABSI in patients with COVID-19 in 2020, while the rate of CLABSI in patients without COVID-19 remained unchanged from the year prior. Higher rates of ICU admission, critical illness, increased numbers of lumens, increased presence of arterial lines, nurse staffing changes, and gaps in routine line prevention processes associated with emergency measures in the COVID-19 cohort ICU may have contributed to this finding. Further work is needed to better understand how to minimize process-related disruptions in central line care during a hospital response to a pandemic.

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