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Study Objectives: Rapid response teams (RRT) aim to reduce morbidity and mortality of hospitalized patients through early intervention on those who are clinically deteriorating. Identifying predictors of early deterioration of patients may improve quality and safety. Abnormal vital signs (VS) have previously been studied as predictors of early deterioration and increased RRT activation after admission from the ED. The primary objective is to identify these predictors of RRT activation within 24 hours of admission. Secondary objectives are to detect differences in hospital length-of-stay (LOS), admitting diagnoses, and 30-day mortality in those with and without RRT (+RRT and −RRT). Last, we examine the predictive value of physician clinical gestalt on RRTs.

Methods: This was a prospective, observational case-control study by chart review of adult patients admitted to Kaweah Health Medical Center between December 2020 and March 2021. Exclusion criteria were age <18, admission to ICU, and direct transfer out of the ED. At time of admission, we performed chart review to collect eight demographics and MAB infusion location when comparing ED and OIC. ED locations.

Tests were used to compare continuous variables between the two MAB infusion location. T-Tests were used to compare categorical variables and MAB infusion location. T-Tests were used to compare continuous variables between the two MAB infusion location.

Results: 195 patients met inclusion/exclusion criteria for analysis (+RRT N=3, −RRT N=196). No significant differences were detected in sex, age, or level of care between our groups. The groups differed in median heart rate and respiratory rate, but the difference was insignificant. There was a marginally significant association between COVID-19 as admitting diagnosis and RRT (p=0.052). There was no significant association between RRT and 30-day mortality. Mean LOS did not differ between the groups (p=0.297). The mean number of abnormal VS in those deceased at 30 days (1.2) was significantly higher than those alive at 30 days (0.7) (p=0.047, correlation coefficient r=0.14). Analysis of clinical gestalt on RRT showed PPV 3.2%, NPV 98.8%, sensitivity 33.3%, and specificity 84.5%.

Conclusion: Due to small sample size, our results did not show significant differences in sex, age, level of care, heart rate, respiratory rate, or LOS between the +RRT and −RRT groups. However, our study was significant for three findings. First, there was a marginally significant association between an admitting diagnosis of COVID-19 and RRT. Second, patients deceased within 30 days had a significantly higher number of abnormal VS than patients who were alive at 30 days, suggesting a positive correlation. Third, results suggest that the clinical gestalt of emergency physicians at predicting who will not have an RRT is reasonably good, but may not be as good at predicting who will have an RRT. Further studies determining other factors contributing to early deterioration can help craft interventions to improve patient safety.

Predictors of Early Clinical Deterioration from the Emergency Department and Clinical Gestalt: A Prospective Case-Control Study

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Comparing Patient Demographics in Those Receiving Monoclonal Antibody Therapy for SARS-CoV-2 in the Emergency Department Versus Outpatient Infusion Centers: A Lesson in Health Care Access During a Global Pandemic

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Study Objectives: Ensuring equitable access to novel treatment modalities has been an ongoing challenge throughout the SARS-CoV-2 pandemic. By implementing a novel SARS-CoV-2 monoclonal antibody (MAB) distribution plan in the emergency department (ED), our health system aimed to improve therapeutic access to more diverse patient populations and limit potential barriers in referral-based outpatient infusion centers (OIC) offering the same treatment. Our study attempts to highlight the unique role the ED can play in the equitable distribution of novel SARS-CoV-2 therapeutics by evaluating the association between patient demographics and MAB infusion location.

Methods: Retrospective cohort study of all COVID-19 infected patients who received MAB infusion at one of six different EDs or four OICs within a single 23-hospital health care system between December 28, 2020 and May 12, 2021. Patients were grouped by MAB infusion location (ED versus OIC). The ED group was defined as all treat-and-release patients presenting unscheduled to the ED who received MAB infusion during their visit. The OIC group was defined as all patients referred to an OIC for a scheduled appointment to receive MAB infusion. A single blinded abstractor gathered specific patient demographic data, defined a priori, from an electronic medical record. We compared race, ethnicity, sex, socioeconomic status (SES) score, and age between the two groups. Chi-square tests were performed to assess the associations between categorical variables and MAB infusion location. T-Tests were used to compare continuous variables between the two MAB infusion locations.

Results: 5,165 patients were eligible for inclusion, of which 19% (4%) received MAB infusions in the ED and 4,970 (96%) received MAB infusions in the OIC. ED patients were more likely to be female (314/195 [58%] versus 2,531/4,970 [51%], p<0.05), more likely to be Black (22/188 [12%] versus 261/4,898 [5%], p<0.001), and less likely to be White (116/188 [62%] versus 3,621/4,898 [74%], p<0.001) when compared to OIC patients. There were no significant associations between the following demographic characteristics and MAB infusion location when comparing ED
Background: Pediatric emergency departments (PED) reported a decrease in overall visits during the COVID-19 pandemic. Telemedicine, fewer visits for lower acuity complaints, and decreased transmission of infectious illnesses have contributed. These factors however may have less impact on ED usage by very young children.

Study Objective: To characterize the early impact of COVID-19 mitigation efforts on the volume, presenting complaints and clinical course of newborns presenting to a tertiary care PED.

Methods: We conducted a descriptive cross-sectional study of all visits by newborns, defined as children < 30 days of age, to a tertiary care PED in the U.S. during the onset of the SARS-CoV-2 pandemic. A state-wide shelter-at-home order was announced on 3/16/2020. Data abstracted from the electronic medical record during the 60-days following the order (3/16/2020-4/28/2020; study period) was compared to the same date range during 3 prior years (2017-2019; baseline period).

Results: Of the 406 total newborn ED visits, 315 were in 2017-2019 (1.1% total ED volume for the baseline period) and 91 were in 2020 (2.3% total ED volume for the study period; P < .001). Mean age, insurance status and race distribution were unchanged; however, the study period proportion of Hispanic patients was significantly lower (27% vs 15.4%; P = .02). A higher proportion of study patients had imaging, procedures, and consults (23.2% vs 41.8%; P < .001, 11.4% vs 30.8%; P < .001, 10.8% vs 24.2%; P < .001). The most common chief complaints were similar with the top 3 complaints accounting for 40% of the baseline period and 48% of the study period. The study admission rate was 31.9% as compared to the baseline rate of 18.7%. Conclusion: Compared to the general population, visits to a tertiary care PED remained largely unchanged for newborn aged patients. While the most common chief complaint categories were consistent between time periods, a higher proportion of study patients had imaging, procedures and consults.

Table 1: Characteristics of 406 newborn visits

|                  | Baseline period (n=315) | Study period (n=91) | P value |
|------------------|-------------------------|---------------------|---------|
| Visit year (total ED visits) |                     |                      |         |
| 2017             | 109 (34.3%)             | 0                   | .007    |
| 2018             | 97 (30.7%)              | 0                   | .007    |
| 2019             | 107 (33.9%)             | 91 (90.9%)          |         |
| Daily visits     | 1.69 ± 0.69             | 1.33 ± 1.33         | .28     |
| Age, days        | 15.9 ± 8.8              | 15.9 ± 8.7          | .79     |
| Age < 8 days     | 76 (24.1%)              | 24 (26.4%)          | .56     |
| Female           | 135 (42.9%)             | 37 (40.7%)          | .79     |
| Race             |                         |                     |         |
| African American | 95 (30.2%)              | 30 (33%)            | .007    |
| White            | 149 (47.3%)             | 52 (57.1%)          | .015    |
| Asian or Pacific Islander | 16 (5.1%) | 1 (1.1%) |         |
| Other            | 55 (17.4%)              | 8 (8.9%)            | .002    |
| Hispanic or Latino | 85 (27.5%)           | 14 (15.4%)          | .002    |
| Private Insurance| 131 (41.6%)             | 44 (48.4%)          | .251    |
| NCIU history     | 37 (11.9%)              | 17 (18.7%)          | .068    |
| High acuity      | 276 (87.6%)             | 80 (88%)            | .940    |
| (ESI: triage 1,2 or 3) |                 |                     |         |
| Labor/tocysting  | 135 (42.9%)             | 42 (46.2%)          | .576    |
| Radiologic imaging| 73 (23.2%)            | 38 (41.8%)          | <.001   |
| Consults         | 36 (11.5%)              | 28 (30.8%)          | <.001   |
| Procedures       | 34 (10.8%)              | 22 (24.2%)          | .001    |
| Admission        | 59 (18.7%)              | 25 (27.9%)          | .007    |
| Title: ED resusc | 5 (1.6%)                | 2 (2.2%)            | .566    |

Values are mean ± SD or number (%). Procedures include: ECG, echocardiogram, lumbar puncture, suture placement, foreign body removal, endotracheal intubation, intravenous access, fluorescent exam, umbilical granuloma, cautetization and EKG.

Conclusions: Patient sex and race are associated with SARS-CoV-2 MAB infusion location. Compared to OIC patients, ED patients were more likely to be female and Black.

Table 2: Top chief complaints for newborn ED visits

| Chief complaints         | Baseline period (n=315) | Study period (n=91) |
|--------------------------|-------------------------|---------------------|
| Jaundice                 | 46 (14.6%)              | 8 (8.8%)            |
| Vomiting                 | 41 (13.3%)              | 19 (20.9%)          |
| Breathing problems       | 40 (12.7%)              | 17 (18.7%)          |
| Rash                     | 39 (12.4%)              | 6 (6.6%)            |
| Abnormal temperature     | 25 (7.9%)               | 8 (8.8%)            |