Table 1: Baseline Characteristics in Patients Admitted Due to COVID-19 who received Remdesivir

| Characteristic                      | Overall (n=150) | Survived (n=134) | Died (n=16) | p-value |
|------------------------------------|-----------------|------------------|-------------|---------|
| Age, median (IQR) years            | 67 (55-77)      | 65 (54-74)       | 78 (70-86)  | <0.001  |
| Median age, (n=150)                | 65 (53-77)      | 65 (54-74)       | 78 (70-86)  | <0.001  |
| Self-reported Race, n (%)          | 288 (18)        | 210 (13)         | 38 (20)     | 0.009   |
| Comorbidities, n (%)               | 160 (65)        | 124 (92)         | 16 (100)    |    |
| Hypertension                       | 88 (55)         | 67 (49)          | 21 (13)     |    |
| Diabetes Mellitus                  | 65 (43)         | 53 (40)          | 12 (75)     |    |
| Obesity (BMI≥30 kg/m²)             | 85 (54)         | 73 (55)          | 12 (75)     |    |
| Chronic Kidney Disease             | 26 (15)         | 15 (11)          | 11 (68)     |    |
| Congestive Heart Failure           | 25 (15)         | 18 (13)          | 7 (44)      |    |
| Coronary Artery Disease            | 144 (92)        | 105 (78)         | 39 (24)     |    |
| Any Cardiovascular Disease*        | 451 (27)        | 388 (28)         | 63 (38)     |    |

Patients receiving remdesivir (red) were included in the study. Routine use of corticosteroids was adopted on all patients in our health system beginning March 20, 2020. System-wide use of remdesivir increased following Food and Drug Administration approval in fall 2020.

On both logistic regression and time-to-event analysis, advanced age and qSOFA ≥ 2 had the highest predictive value for mortality. Others comorbidities were similar and comparable in importance.

Conclusion. The population in our real-world study was older with more comorbidities as compared to ACCT-1, and the 30-day mortality was 15%. Despite the use of CS and TDF advanced age and qSOFA were the most important drivers of mortality. Future, therapeutic strategies need to focus on this group which is at the highest risk of dying from COVID-19 infection.

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548. Convalescent Plasma in Hospitalized Pediatric and Obstetric patients with COVID-19

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Session: P-24. COVID-19 Treatment

Background. Published data on COVID-19 convalescent plasma (CCP) use in children and obstetric patients is limited. We describe a single-center experience of hospitalized patients who received CCP for acute COVID-19.

Methods. We performed a retrospective review of children 0-18 years-old and pregnant patients hospitalized with laboratory-confirmed acute COVID-19 who received CCP from March 1st, 2020 to March 1st, 2021. Clinical and laboratory data were collected to assess the safety of CCP administration. Antibodies to SARS-CoV-2 were measured before and at various time points post CCP transfusion. Correlation between SARS-CoV-2 immunoglobulin levels and death post-transfusion response in only obstetric patients. Randomized trials in pediatric and obstetric patients are needed to further understand how to dose CCP and evaluate efficacy.

Results. Twenty-two children and 10 obstetric patients were eligible. 12 pediatric and 8 obstetric patients had moderate disease and 10 pediatric and 2 obstetric patients had severe disease. 5 pediatric patients died. 18/37 (48.6%) CCP units that received CCP from March 1st, 2020 to March 1st, 2021. Clinical and laboratory data were collected to assess the safety of CCP administration. Antibodies to SARS-CoV-2 were measured before and at various time points post CCP transfusion. Correlation between SARS-CoV-2 immunoglobulin levels and death post-transfusion response in only obstetric patients. Randomized trials in pediatric and obstetric patients are needed to further understand how to dose CCP and evaluate efficacy.

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549. Monoclonal Antibody Therapy for COVID-19 Infection in Michigan: The Flint Experience

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Session: P-24. COVID-19 Treatment

Background. Bamlanivimab (BAM), a neutralizing IgG1 monoclonal antibody (mAb), received emergency use authorization (EUA) by the U.S. Food and Drug Administration (FDA) for treatment of mild to moderate COVID-19 infection in patients 12 years of age and older weighing at least 40 kg at high risk for progressive and severe disease on Nov 10, 2020. The purpose of this study is to describe our experience with this treatment modality.

Methods. Hurley Medical Center (HMC), a 443-bed inner city teaching hospital in Flint, MI. HMC administered its first BAM infusion on Nov 19, 2020. Through April 30, 2021, 407 patients with confirmed SARS-CoV-2 infection, received a mAb infusion. 62/407 patients received the combination mAb therapy of BAM + Etesivimab, as the EUA for BAM monotherapy was revoked on 04/16/21. We retrospectively collected basic demographic data and hospitalization to our facility within 14 days of receiving mAb therapy of these patients.
**Results.** During the 5.5 month study period, patients receiving mAb therapy at HMC had a mean age of 56 years (± standard deviation) (± 15.4) and a mean Body Mass Index (BMI) of 34 kg/m² (± 8.5) (Tables 1,2). African Americans (AA) comprised 48% (194/407) (Table 3) and females comprised 54% (220/407) of the cohort. 6% (25/407) of the patients required hospitalization within 14 days of mAb infusion, had a mean age of 58 yrs (± 17) (p-value 0.62) and a mean BMI of 32 kg/m² (± 9) (p-value 0.33). Females and AA comprised 56% (14/25) and 48% (12/25) of this subgroup respectively (p-value 1.0). No deaths were reported within 30 days of infusion in this cohort.

**Conclusion.** Previously published reports cite a hospitalization rate in untreated high-risk COVID-19 infected patients of 9-15%. During the period of study, the county hospitalization rate and county mortality rate for all comers with COVID-19 was 6.6% and 2.7% respectively while our high risk cohort had a hospitalization rate of 6% and with no deaths reported. Our cohort had much lower rates of hospitalization and death than would be expected especially in a group which comprised of 48% AA in an underserved area. mAb therapy seems to have a protective effect with significant reduction in the hospitalization and mortality rate among high-risk patients with COVID-19 infection and should be prioritized for administration.

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**550. Bamlanivimab and Casirivimab/Imdevimab Treatment Outcomes: Results from a Large Healthcare System’s Structured Implementation Experience**

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**Background.** Neutralizing antibody therapies targeting SARS-CoV-2 have been released for emergency use authorization by the FDA. Little is published on their real-world experience. In this retrospective study we share the results of our early experience on patient outcomes from use of these neutralizing antibodies within a large healthcare system.

**Methods.** We retrospectively analyzed results of a healthcare system wide program to pro-actively identify and treat COVID-19 patients with neutralizing antibody therapy.

**Results.** The 449 patients identified for SARS-CoV-2 neutralizing antibody therapy during the study period were retrospectively classified as falling in one of the three groups: untreated (199), bamlanivimab (87) and casirivimab/imdevimab (125) treated patients (Table 1). Reasons identified patients were not treated most commonly were patient declined (n=74), unable to be contacted (n=36), out of treatment window (n=21) or did not have transportation (n=9). Bamlanivimab infusion did not reduce emergency room (ER) visits or hospitalization compared to untreated patient within 30-days of follow up (Table 2), and among all patients treated with antibody therapy only treatment with bamlanivimab and non-white race were predictors of need for hospitalization (Table 3). Casirivimab/imdevimab did reduce subsequent ER visits or hospitalization within 30 days post-infusion when compared to the untreated group. However, patients treated with either antibody therapy had lower acuity of COVID-19 disease as reflected in need for intensive care unit (ICU) stay, mechanical ventilation or death (Table 2).

**Table 1. Characteristics of infused vs uninfused patients**

| Variable                | Untreated (n = 199) | Bamlanivimab (n=87) | Casirivimab/Imdevimab (n=125) | P value |
|-------------------------|---------------------|----------------------|-------------------------------|---------|
| Female gender           | 112 (56%)           | 39 (45%)             | 63 (50%)                      | NS      |
| Median age (range)      | 62 (20-92)          | 65 (23-91)           | 59 (19-98)                    | NS      |
| Age >65                 | 85 (44%)            | 46 (53%)             | 38 (30%)                      | <0.05   |
| Race / Ethnicity        | White               | 119 (60%)            | 60 (69%)                      | <0.05   |
| African-American        | 56 (28%)            | 20 (23%)             | 17 (14%)                      | <0.05   |
| Hispanic                | 12 (6%)             | 5 (6%)               | 7 (6%)                        | NS      |
| Asian                   | 11 (59%)            | 1 (12%)              | 2 (16%)                       | NS      |
| Others / Unknown        | 5 (2%)              | 1 (1%)               | 2 (1%)                        | NS      |
| COPD                    | 28 (14%)            | 8 (9%)               | 19 (15%)                      | NS      |
| Heart disease           | 19 (9%)             | 11 (13%)             | 12 (10%)                      | NS      |
| Immunocompromised        | 20 (10%)            | 26 (30%)             | 19 (15%)                      | <0.001  |
| Chronic kidney disease  | 19 (9%)             | 20 (23%)             | 13 (10%)                      | <0.05   |
| Obesity BMI>35          | 66 (33%)            | 31 (36%)             | 42 (34%)                      | NS      |
| Obesity BMI<35          | 133 (67%)           | 57 (64%)             | 86 (68%)                      | NS      |
| Mean days to infusion   | 15 (55%)            | 51 (59%)             | 54 (45%)                      | NS      |
| from symptom onset      |                     |                      |                               |         |
| (range)                 |                     |                      |                               | <0.001  |
| Time to infusion from   |                     |                      |                               |         |
| symptom onset <5 days   | 53 (61%)            | 48 (58%)             |                               | <0.001  |

**Table 2. Outcomes in treated vs untreated patients**

| Variable                | ER Visit (%) | Hospitalized (%) | ICU Stay (%) | Mechanical Ventilation (%) | Death (%) |
|-------------------------|--------------|------------------|--------------|---------------------------|-----------|
| No treatment (n=199)    |              |                  |              |                           |           |
| Total                   | 21 (10%)     | 25 (12%)         | 8 (4%)       | 3 (16%)                   | 4 (2%)    |
| COVID-19 related        | 18 (9%)      | 24 (12%)         | 8 (4%)       | 3 (16%)                   | 4 (2%)    |
| Bamlanivimab (n = 87)   |              |                  |              |                           |           |
| Total                   | 8 (9%)       | 12 (14%)         | 1 (25%)      | 0 (0%)                    | 0 (0%)    |
| COVID-19 related        | 6 (7%)       | 10 (11%)         | 1 (25%)      | 0 (0%)                    | 0 (0%)    |
| Casirivimab/Imdevimab (n=125) | 3 (25%) | 3 (25%) | 1 (25%) | 0 (0%) | 0 (0%) |
| COVID-19 related        | 1 (9%)       | 3 (25%)          | 1 (25%)      | 0 (0%)                    | 0 (0%)    |

*Results for visits non-COVID related trauma (4), hemorrhage (1), ischemic colitis (1), diverticulitis (1), congestive heart failure (1), bacterial meningitis (1), hand pain (1).
* p.<0.01 for Regeneron vs Untreated

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