Anti-SARS-CoV-2 Monoclonal Antibodies for Early COVID-19: A Real-World Experience

Katherine Belden, MD
Bryan Hess, MD
Caroline Brugger, CRNP
Rachel Carr, PA
Todd Braun, MD

See next page for additional authors

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Patients characterized (Table 1): 367 patients were treated with neutralizing monoclonal antibodies during the study period. The mean age was 63 years (SD 14.7 years). A total of 201 patients (55%) were male, 278 patients (76%) were white, 34 patients (9%) were African American, 10 patients (2.7%) were Asian and 9 patients (2.4%) identified as Latino or Hispanic. All patients had a first positive direct SARS-CoV-2 test within 10 days of infusion and met EUA high-risk criteria with 326 patients (62%) having more than one risk factor. Thirty-two patients (9%) had received at least one dose of SARS-CoV-2 vaccine with 32 patients presenting more than 10 days after first vaccination. Of 352 patients available zivocid (Table 2), 135 patients (38%) had a Community Need Index and 135 patients (38%) had a Social Vulnerability Index > 1.5.

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Our study demonstrates that treatment with anti-SARS-CoV-2 neutralizing monoclonal antibodies is feasible in a high resource urban health care setting. Infusion was well tolerated by the majority of patients and there were no known infusion center SARS-CoV-2 exposures. Twenty treated patients (5%) were hospitalized for COVID-19 including one patient during the study period. Randomized clinical trials of anti-SARS- CoV-2 monoclonal antibodies have reported lower rates of hospitalizations in treated patients than we found in our patients.4 This may reflect the expanded time frame for infusion through EUA therapy (10 days) as compared to clinical trials with patients missing the optimal window for benefit, and/or increased comorbidities in real world patients. Monoclonal antibody efficacy may be diminished in SARS-CoV-2 viral mutations involving spike protein substitutions which are now seen in global circulation although data are lacking on the clinical relevance of mutations. Casirivimab/Imdevimab has been shown to maintain variant coverage, while Sotrovimab, the most recent antibody to receive authorization, has expanded coverage of viral variants.5

Given the potential for benefit in high-risk patients, especially those who are unvaccinated or at risk for poor vaccine response, and feasibility with a co-located testing and treatment site as we study demonstrates, anti-SARS-CoV-2 monoclonal antibody therapy in early COVID-19 and efforts towards equitable utilization should remain a focus for researchers and clinicians. Expanded therapy to include emergency department and/or observation admission administration as well as sub-cutaneous dosing may increase accessibility.

References