BAM! COVID-OUT: Help is on the way

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Introduction

Bamlanivimab is a recombinant neutralizing human IgG1K monoclonal antibody that binds to the spike protein of the SARS-CoV-2 virus and inhibits its attachment to the human ACE2 receptor, leading to antibody-mediated cytotoxicity.

Case description

- FJ is an 81 y/o F with advanced dementia, atrial fibrillation, hypertension, sick sinus syndrome s/p pacemaker who was admitted to the Manor SNF for rehab, also found to be SARS-CoV2 positive.
  - Mild sx: nonproductive cough
  - Denies SOB, chest pain

Guidelines

- FDA had approved emergency use of Bamlanivimab to treat patients in the outpatient setting who have mild to moderate cases of COVID-19 and not requiring oxygen, with risk factors for progression to severe infection and/or hospitalization.

Labs/Physical Exam

- Hgb 11.7 (L)
- No leukocytosis
- **PLTs 519 (H)**
- **CRP 6.9 (H)**
- **LDH 332 (H)**
- **ESR 69 (H)**
- **Ferritin 377 (H)**
- D-Dimer 219 (N)
- **Rapid strep positive**
- **SARS-CoV2 positive**
- UA unremarkable

- Remained afebrile, VSS
  Gen: thin, NAD, no resp distress
- Lungs: poor inspiratory effort, CTABL
- **CXR unremarkable**

Management

- S/p 5 day course of Augmentin for treatment of strep
- Supportive measures, including vitamin D, C, zinc sulfate and melatonin per current recommendations
- S/p Bamlanivimab on 3/30/21- tolerated well, no adverse reactions
- Overall condition improved in terms of strength, mild nonproductive cough had resolved prior to discharge
- Patient did not require oxygen or hospitalization throughout duration of stay.

Discussion

- WHO reports data that 80% of infections are mild or asymptomatic
- Bamlanivimab was a potential treatment method for those patients with mild to moderate infections to prevent hospitalization or severe disease.
- Preliminary studies showed that it was most effective when given early in infection.
- Our patient met high-risk criteria and was eligible to receive Bamlanivimab infusion which she tolerated without any issues.
- A Phase 2 double blind clinical trial, BLAZE-1 showed decreased viral load in patients who received treatment vs placebo. These patients were less likely to be hospitalized or require oxygen, up to 28 days after receiving treatment.

Update

On April 16, 2021, FDA revoked the emergency use of bamlanivimab (alone) due to increasing frequency of resistant variants and potential treatment failure. However, Bamlanivimab has been combined with other monoclonal antibodies for use.