

Anaphylaxis Due to Remdesivir

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23 **Introduction:**

24 Dear Editor,

25 In December 2019 severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first
26 detected in Wuhan, China and found to cause acute respiratory symptoms and pneumonia.¹ To
27 date, the disease caused by SARS-CoV-2, coronavirus disease 2019 (COVID-19) has resulted in
28 over 100 million known cases and over 2 million deaths worldwide with limited effective
29 pharmacologic treatment options.² Remdesivir, an antiviral prodrug whose metabolite acts as a
30 nucleoside analog inhibiting viral RNA-dependent RNA polymerase,³ was approved by the Food
31 and Drug Administration on October 22, 2020 for treatment of COVID-19 in adult and pediatric
32 patients over 12 years of age and weighing over 40 kilograms.⁴ Although adverse events such as
33 transaminitis and renal injury have been reported, the drug is thought to be relatively safe and
34 reports of severe infusion-related reactions are scarce.⁵ While anaphylaxis is listed as a possible
35 adverse effect of the medication on the package insert,⁶ no references are given. Here, we present
36 the first case to our knowledge of anaphylaxis due to remdesivir.

37 **Case report:**

38 A 56-year-old female with glaucoma presented with cough and dyspnea after being found
39 positive for SARS-CoV-2 via polymerase chain reaction testing six days prior. She initially
40 required low-flow supplemental oxygen and was prescribed 200mg of intravenous remdesivir on
41 the first day of her hospital stay followed by 100mg infusions in 250mL of 0.9% sodium chloride
42 for the following four days, each to be given over one hour. The first two infusions were well-
43 tolerated. However, 14 minutes after initiation of the second 100mg infusion, she developed
44 erythema of her face, neck and upper chest, urticaria, perioral edema, and wheezing. The only
45 other medications that she received earlier in the day were 200mg of oral benzonatate an hour

46 prior as well as 40mg of delayed-release oral pantoprazole and 40mg of subcutaneous
47 enoxaparin four hours prior, all of which she had received previously without adverse reaction.
48 She emergently received 0.3mg of intramuscular epinephrine and 125mg of intravenous
49 methylprednisolone and was intubated due to worsening hypoxia and apnea. In light of her
50 constellation of signs and symptoms as well their onset during remdesivir infusion, she was
51 determined to have experienced an anaphylactic reaction due to remdesivir. She did not receive
52 further remdesivir infusions and was extubated approximately 24 hours following intubation.
53 Ultimately, she was discharged home after an eight day hospitalization with no need for further
54 oxygen therapy.

55 **Discussion:**

56 This case of presumed anaphylaxis to remdesivir is important for clinicians to be aware of in the
57 setting of the international pandemic of COVID19 where limited treatment options are currently
58 available. Currently, many believe the potential benefits of treatment with remdesivir outweigh
59 the risks, as there have been a paucity of severe adverse reactions reported. We hope this case
60 can improve provider awareness of the possibility of anaphylaxis due to remdesivir.

61 **Conclusion:**

62 We present a case of suspected anaphylaxis due to remdesivir in a patient with COVID-19.
63 Providers treating such patients should be aware of the possibility of severe adverse reactions to
64 this antiviral agent.

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