Remdesivir for patients with COVID-19

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1 Remdesivir is an antiviral drug with activity against an array of RNA viruses

Remdesivir is an intravenous inhibitor of the viral RNA-dependent RNA polymerase with in vitro and in vivo activity against Middle East respiratory syndrome coronavirus, severe acute respiratory syndrome coronavirus 1 (SARS-CoV-1) and SARS-CoV-2.[1–3] In Canada, it is authorized and available through Health Canada for patients (≥ 12 yr of age and weighing ≥ 40 kg) with coronavirus disease 2019 (COVID-19) who require oxygen.[3]

2 Remdesivir has been tested as a treatment for COVID-19 in 2 large clinical trials

There are 4 published randomized controlled trials (RCTs) that evaluated remdesivir for treatment of COVID-19.[1,2,4,5] The 2 largest were the Adaptive Covid-19 Treatment Trial (ACTT-1), a placebo-controlled RCT involving 1062 patients,[1] and Solidarity, an open-label RCT that compared treatment with remdesivir to standard of care in 6838 patients.[5]

3 Remdesivir may reduce recovery time but does not reduce mortality

The ACTT-1 found that median time to clinical improvement was shortened from 15 to 10 days, with the greatest improvement seen in patients requiring low-flow oxygen. The trial did not find a difference in mortality (hazard ratio 0.73, 95% confidence interval [CI] 0.52–1.03), although it was not powered to do so.[1] Solidarity failed to show a mortality benefit (rate ratio 0.95, 95% CI 0.81–1.11) and also did not show a benefit in the prespecified secondary outcomes of ventilation or time to discharge.[5]

4 Remdesvir does not help critically ill patients

Subgroup analyses from ACTT-1 and Solidarity showed that remdesivir conferred no benefit in patients who were intubated or on extracorporeal membrane oxygenation.[1,5] Although less certain, there did not appear to be significant benefit for patients on high-flow oxygen.[1,5]

5 Data for adverse events are limited but include hepatotoxicity and hypersensitivity reactions

Patients with elevated levels of liver enzymes or a glomerular filtration rate less than 30 mL/min were excluded from the published trials.[1,2,4,5] Drug-induced liver injuries have been reported,[6] and anaphylaxis and infusion-related reactions can occur.[1]

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