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Effect of drugs used to treat COVID-19 on mortality rate

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The COVID-19 pandemic is causing millions of deaths around the world, so we are looking for the most effective drug therapy to fight the infection. Elderly patients with multiple comorbidities and polytherapy are at risk of developing a severe COVID-19. Less than two years after the start of the pandemic, some cornerstones in therapy have been achieved, for example, a randomized controlled trial (RCT) demonstrated that in COVID-19 patients receiving oxygen support, including invasive mechanical ventilation, dexamethasone significantly reduced mortality rate compared to the control group1. For some drugs, there is clear scientific evidence on their role in the clinical improvement of the COVID-19 patients, while definitive data on their effect on mortality are still lacking. Remdesivir was the first drug approved for COVID-19 (authorization by EMA in July 2020), because of its statistically significant clinical recovery in COVID-19 patients who improved their clinical condition in 10 days rather than 152. The WHO SOLIDARITY trial found no differences in mortality reduction between remdesivir-treated patients and the control group, unlike other RCTs that demonstrate such efficacy3. Tocilizumab is also widely used in severe and critically ill patients. This drug reduced the mortality rate in these patients, as reported in a recent metanalysis that analyzed observational studies, while it failed in this outcome when the same meta-analysis analyzed RCTs4. Studies on baricitinib, used for its immunosuppressive activities and antiviral potential, are continuing. An RCT showed that taking baricitinib and remdesivir improved clinical status, reduced median time to recovery and 28-day mortality compared to remdesivir alone, notably in COVID-19 patients receiving high-flow oxygen or noninvasive ventilation5. We need to analyze all the available data and we await further scientific evidence to understand if the drugs we are using because they improve clinical outcomes, also lead definitively to a reduction in mortality rate.

Biography

Carmine Sellitto is an MD specialist in Clinical Pharmacology and Toxicology. He is currently attending the PhD in Translational Medicine of Development and Active Aging at the University of Salerno. He belongs to the Department of Medicine, Surgery and Dentistry of the same University and works at the Clinical Pharmacology and Pharmacogenetic Unit of the University Hospital of Salerno. He carries out an intense research activity in the field of pharmacology, pharmacogenetics, physical activity in athletes and oxidative stress.