REAL LIFE EXPERIENCE ON THE USE OF REMDESIVIR IN PATIENTS ADMITTED TO COVID-19 IN TWO REFERRAL ITALIAN HOSPITAL: A PROPENSITY SCORE MATCHED ANALYSIS

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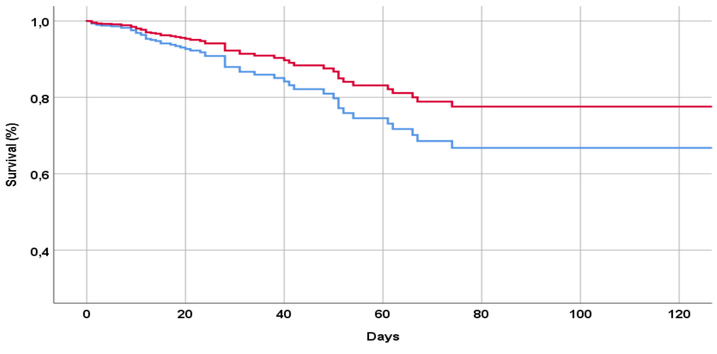
BACKGROUND

Remdesivir (RDV) was the first Food and Drug Administration (FDA)-approved medication for COVID-19, with discordant data on efficacy in reducing mortality risk and disease progression. In the context of a dynamic and rapidly changing pandemic landscape, the utilization of real-world evidence is of utmost importance. The objective of this study is to evaluate the impact of RDV on patients who have been admitted to two university referral hospitals in Italy due to COVID-19.

METHODS

All patients older than 18 years and hospitalized at two different universities (Bari and Palermo) were enrolled in this study. To minimize the effect of potential confounders, we used propensity score matching with one case (remdesivir) and one control that never experienced this kind of intervention during hospitalization. Mortality was the primary outcome of our investigation, and it was recorded using death certificates and/or medical records. Severe COVID-19 was defined as admission to the intensive care unit or a qSOFAscore ≥2 or CURB65scores≥3.

Figure 1. Association between use of remdesivir and mortality during the follow-up period**.**



Remdesivir in hospitalized COVID-19 patients is a safe therapy associated with improved clinical outcomes, including halvy mortality and severe COVID, and with a reduction of around 75% of the risk of invasive ventilation.

RESULTS

After using propensity score matching, 365 patients taking remdesivir and 365 controls were included. No significant differences emerged between the two groups in terms of mean age and percentage of females, while patients taking remdesivir were less frequently active smokers (p<0.0001). Moreover, the patients taking remdesivir were less frequently vaccinated against COVID-19. All the other clinical, radiological, and pharmacological parameters were balanced between the two groups. The use of remdesivir in our cohort was associated with a significantly lower risk of mortality during the follow-up period (HR = 0.63; 95% CI: 0.35-0.92; p = 0.01). Moreover, RDV was associated with a significantly lower incidence of non-invasive ventilation (OR = 0.25; 95% CI: 0.18–0.35) and severe COVID (OR = 0.42; 95% CI: 0.29–0.60). Furthermore, we observed two cases of mild renal failure and two cases in which the physicians decided to interrupt Remdesivir for bradycardia and for QT elongation

Table 2. Association between remdesivir and outcomes of interest, after the matching using a propensity score.

Outcome	Cumulative incidence in controls	Cumulative incidence in remdesivir	HR/OR, 95%CI	p-value
Mortality	11.2	4.7	0.63 (0.35-0.92)	0.01
Use of non-invasive ventilation during hospitalization	81.6	52.7	0.25 (0.18-0.35)	<0.0001
Severe COVID[1]	85.5	71.0	0.42 (0.29-0.60)	<0.0001

Table 1. Baseline characteristics by use or not of remdesivir, after the matching using a propensity score.

Parameter	Controls (n=365)	Remdesivir (n=365)	p-value
Demographics			
Age (mean, SD)	55.4 (15.0)	56.2 (17.1)	0.52
Females (%)	59.7	52.6	0.06
Current smokers (%)	9.3	3.0	<0.0001
Comorbidities			
Any comorbidity	47.1	52.1	0.21
Hypertension	48.8	40.3	0.03
Dyslipidemia	20.5	26.6	0.07
Type 2 diabetes	20.8	14.2	0.03
Obesity	16.4	9.0	0.005
COVID-19 clinics			
Dyspnea	36.7	28.5	0.02
Anosmia	4.9	6.6	0.43
Dysgeusia	18.1	28.5	0.001
Fever	58.9	76.2	<0.0001
Cough	34.2	41.4	0.06
Gastrointestinal symptoms (%)	14.8	20.5	0.05
SpO2 <92%	71.0	71.0	1.00
Presence of pneumonia	93.2	94.0	0.76
Vaccinated against COVID-19 (%)	62.5	24.9	<0.0001
Other therapies			
Use of corticosteroids	72.6	81.6	0.05
Use of heparins	80.0	81.6	0.64
Use of monoclonal antibodies	8.9	11.8	0.25

CONCLUSION

Our study suggests that the use of Remdesivir in hospitalized COVID-19 patients is a safe therapy associated with improved clinical outcomes, including halvy mortality and severe COVID, and with a reduction of around 75% of the risk of invasive ventilation. In a constantly changing COVID-19 scenario, ongoing research is necessary to tailor treatment decisions based on the latest scientific evidence and optimize patient outcomes.

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