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73. Geographical Disparities in Clinical Outcomes of Severe COVID-19 Patients Treated with Remdesivir

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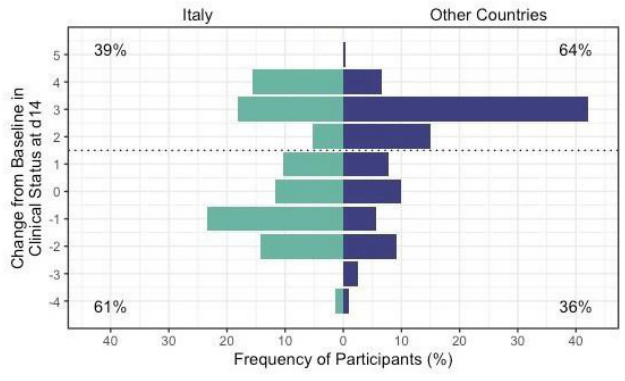
Session: O-14. COVID-19 Therapies

Background: Remdesivir (RDV), a RNA polymerase inhibitor with potent in vitro activity against SARS-CoV-2, is the only treatment with demonstrated efficacy in shortening the duration of COVID-19. Here we report regional differences in clinical outcomes of severe COVID-19 patients treated with RDV, as part of an open-label, randomized phase-3 trial establishing RDV treatment duration.

Methods: Hospitalized patients with oxygen saturation ≤94%, a positive SARS-CoV-2 PCR in the past 4 days and radiographic evidence of pneumonia were randomized 1:1 to receive 5d or 10d of intravenous RDV. We compared d14 clinical outcomes of patients from different geographical areas, as measured by mortality rates, change in clinical status from baseline (BL) on a 7-point ordinal scale and change in O2 requirements from BL. Based on previous analyses in compassionate use data showing region as an important predictor of outcome, Italy was examined separately from other regions.

Results: 397 patients were treated with RDV, of which 229 (58%) were in the US, 77 (19%) Italy, 61 (15% in Spain), 12 (3%) Republic of Korea, 9 (2%) Singapore, 4 (1%) Germany, 4 (1%) Hong Kong and 1 (< 1%) Taiwan. BL clinical status was worse in Italy compared to other regions (72% vs 17% requiring high-flow oxygen delivery or higher), and Italian patients were more likely to be male than patients from other regions (69% vs 63%). Overall results showed 5d RDV was as effective as 10d. Mortality at d14 was higher in Italy (18%) compared to all other countries except Italy (7%). Similarly, clinical improvement at d14, measured as ≥2-point increase in the ordinal scale, was lower in Italian patients (39%) compared to all other countries combined (64%). (Fig.1).

Figure 1. Change from Baseline in Clinical Status (measured on a 7-point Ordinal Scale) at d14.



Conclusion: Overall, our results demonstrate significant geographical differences in the clinical course of severe COVID-19 patients treated with RDV. We observed worse outcomes, such as increased mortality and lower rate of clinical improvement, in patients from Italy compared to other regions.

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74. Empiric Antibiotic Therapy and Community-onset Bacterial Co-infection in Patients Hospitalized with COVID-19: A Multi-hospital Cohort Study

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Session: O-14. COVID-19 Therapies

Background: Antibiotic therapy has no known benefit against COVID-19, but is often initiated out of concern for concomitant bacterial infection. We sought to determine how common early empiric antibiotic therapy and community-onset bacterial co-infections are in hospitalized patients with COVID-19.

Methods: In this multi-center cohort study of hospitalized patients with COVID-19 discharged from 32 Michigan hospitals during the COVID-19 Michigan surge, we describe the use of early empiric antibiotic therapy (within the first two days) and prevalence of community-onset bacterial co-infection. Additionally, we assessed patient and hospital predictors of early empiric antibiotic using poison generalized estimating equation models.

Results: Between 3/10/2020 and 5/10/2020, data were collected on 951 COVID-19 PCR positive patients. Patient characteristics are described in **Table 1**. Nearly two thirds (62.4%, 593/951) of COVID-19 positive patients were prescribed early empiric antibiotic therapy, most of which (66.2%, 393/593) was directed at community-acquired pathogens. Across hospitals, the proportion of COVID-19 patients prescribed early empiric antibiotics varied from 40% to 90% (**Figure 1**). On multivariable analysis, patients were more likely to receive early empiric antibiotic therapy if they were older (adjusted rate ratio [ARR]: 1.01 [1.00–1.01] per year), required respiratory support (e.g., low flow oxygen, ARR: 1.16 [1.04–1.29]), had signs of a bacterial infection (e.g., lobar infiltrate, ARR: 1.17 [1.02–1.34]), or were admitted to a for-profit hospital (ARR: 1.27 [1.11–1.45]); patients admitted later were less likely to receive empiric antibiotics (April vs. March, ARR: 0.72 [0.62–0.84], **Table 2**). Community-onset bacterial co-infections were identified in 4.5% (43/951) of COVID-19 positive patients (2.4% [23/951] positive blood culture; 1.9% [18/951] positive respiratory culture).