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SYSTEMIC DEXAMETHASONE PLUS REMDESIVIR AND DEXAMETHASONE ALONE EFFECT ON IN-HOSPITAL MORTALITY AMONG COVID-19 PATIENTS HOSPITALIZED IN THE UNIVERSITY HOSPITAL, LITHUANIA

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Background

Systemic corticosteroids and remdesivir are the most prescribed treatment options for hospitalized COVID-19 patients requiring supplemental oxygen or ventilation. The objective of this study was to evaluate the effect of the treatment with systemic dexamethasone plus remdesivir, systemic dexamethasone alone and usual treatment (no remdesivir, no dexamethasone) on in-hospital mortality of COVID-19 patients.

Methods

COVID-19 positive adults hospitalized in Vilnius University Hospital Santaros Klinikos, Lithuania, were included in this retrospective cohort study between March 2020 and May 2021. Depersonalized data were retrieved from electronic medical records. Participants were divided into three groups according to the treatment they received:

- Systemic dexamethasone + remdesivir
- Systemic dexamethasone
- Usual treatment (no remdesivir, no dexamethasone)

Mann – Whitney U test or x^2 test was used to compare variables, linear regression – to evaluate variation in level of blood inflammatory markers, and Cox proportional hazards regression – to evaluate treatment effect on in-hospital mortality within 30 days after hospitalization. *p*-value < 0.05 was considered significant.

Results

- A total of **2552** patients were included in this study.

Systemic dexamethasone + remdesivir	Systemic dexamethasone	Usual treatment
747 (29.3%)	803 (31.5%)	1002 (39.3%)

- The age median was 59 (IQR 48 – 70) years, 45.3% were woman.
- Remdesivir was administered for median 5 (IQR 5–5) days, maximum 10 days. Systemic dexamethasone was administered for median 8 (IQR 4–10) days in systemic dexamethasone group and 9 (IQR 7–10) days in systemic dexamethasone plus remdesivir group.
- During the first 10 days after admission, C-reactive protein and interleukin 6 levels decreased in all treatment groups with no statistically significant differences in the rates of decline (Figure 1).
- The treatment combination of systemic dexamethasone plus remdesivir was associated with decreased in-hospital mortality (HR 0.58; 95%CI 0.41–0.81, p=0.002), while the treatment with dexamethasone alone effect was not significant (HR 1.12; 95%CI 0.87–1.44, p=0.397) compared to usual treatment group. The Kaplan–Meier survival curve is shown in Figure 2.

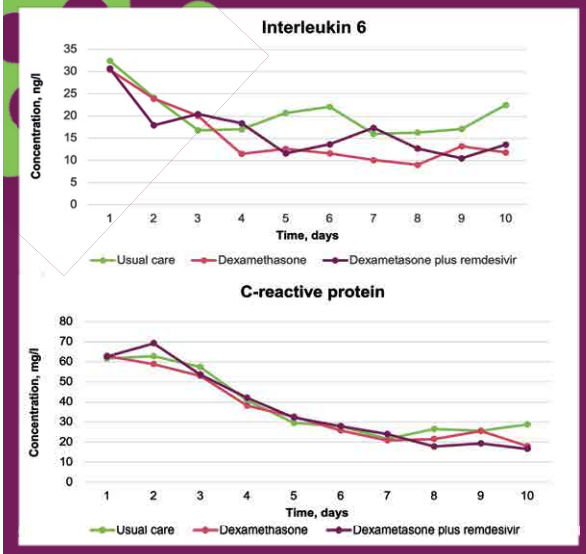

Figure 1. Variation of blood serum inflammatory markers, stratified by treatment group.

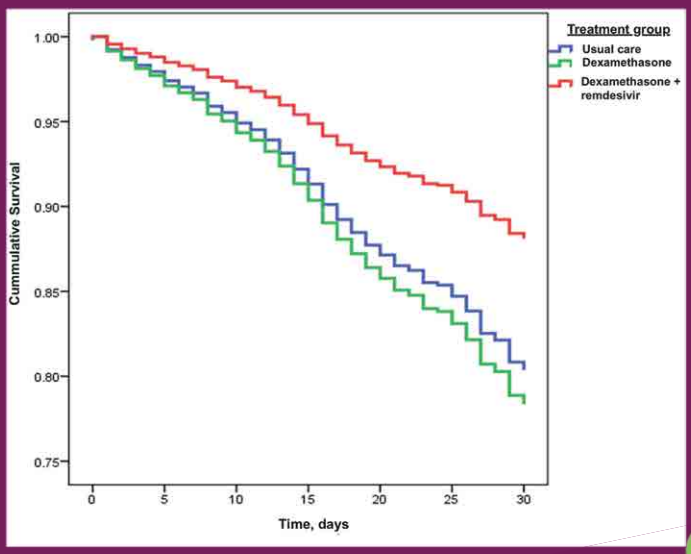

Figure 2. The Kaplan–Meier survival curve of hospitalized patients' survival, stratified by treatment group.

Conclusions

- Treatment with systemic dexamethasone or the combination of systemic dexamethasone with remdesivir had comparable impact on reduction of inflammatory blood serum markers in COVID-19 patients.
- Treatment combination of systemic dexamethasone plus remdesivir 1.7 times decreases the hazard of 30 days in-hospital mortality, while systemic dexamethasone has no effect on it.

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