



Optimal Duration of Systemic Corticosteroids Use in COVID-19 Treatment: A Meta-analysis

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Background

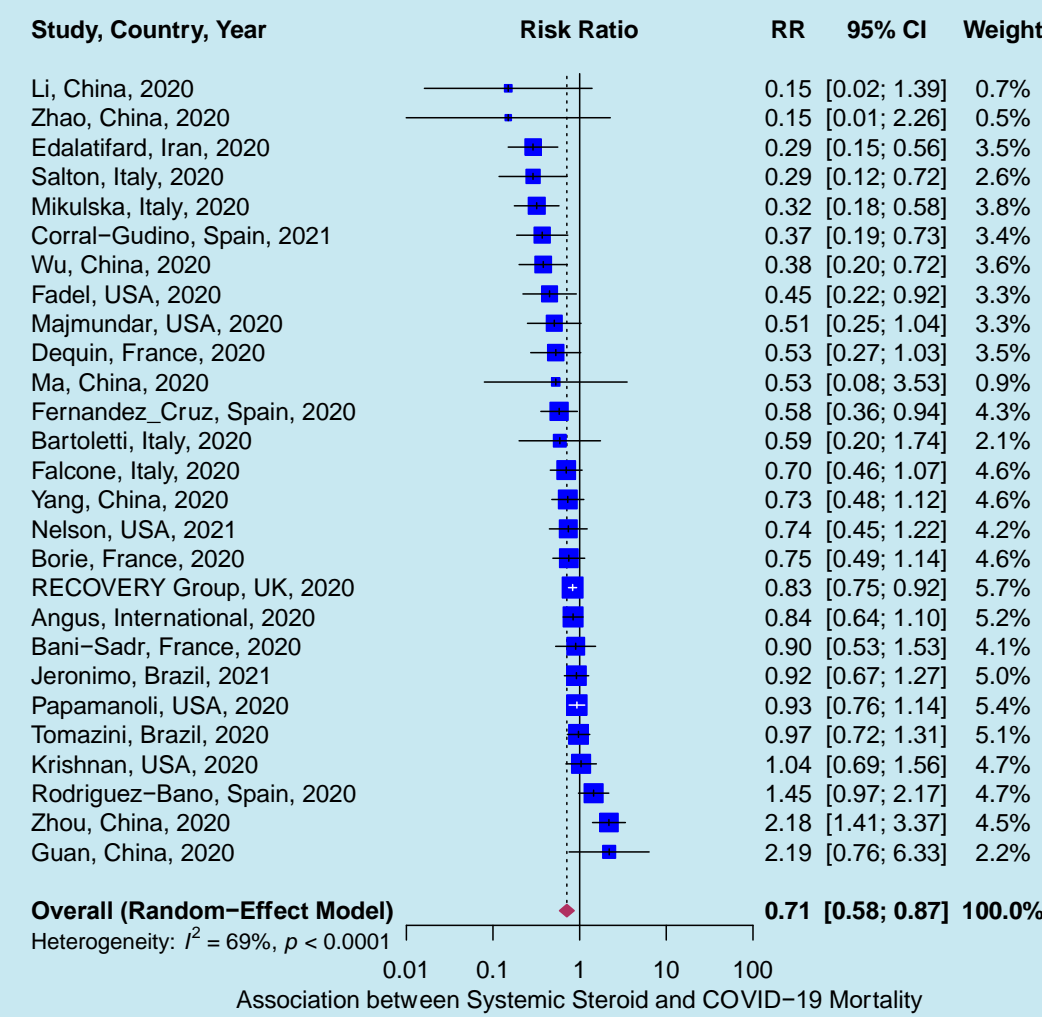
Corticosteroids confer a survival benefit in hospitalized COVID-19 patients requiring oxygen, but optimal treatment duration remains uncertain. The goal of this meta-analysis is to determine the optimal duration of corticosteroids in the treatment of severe COVID-19.

Methods

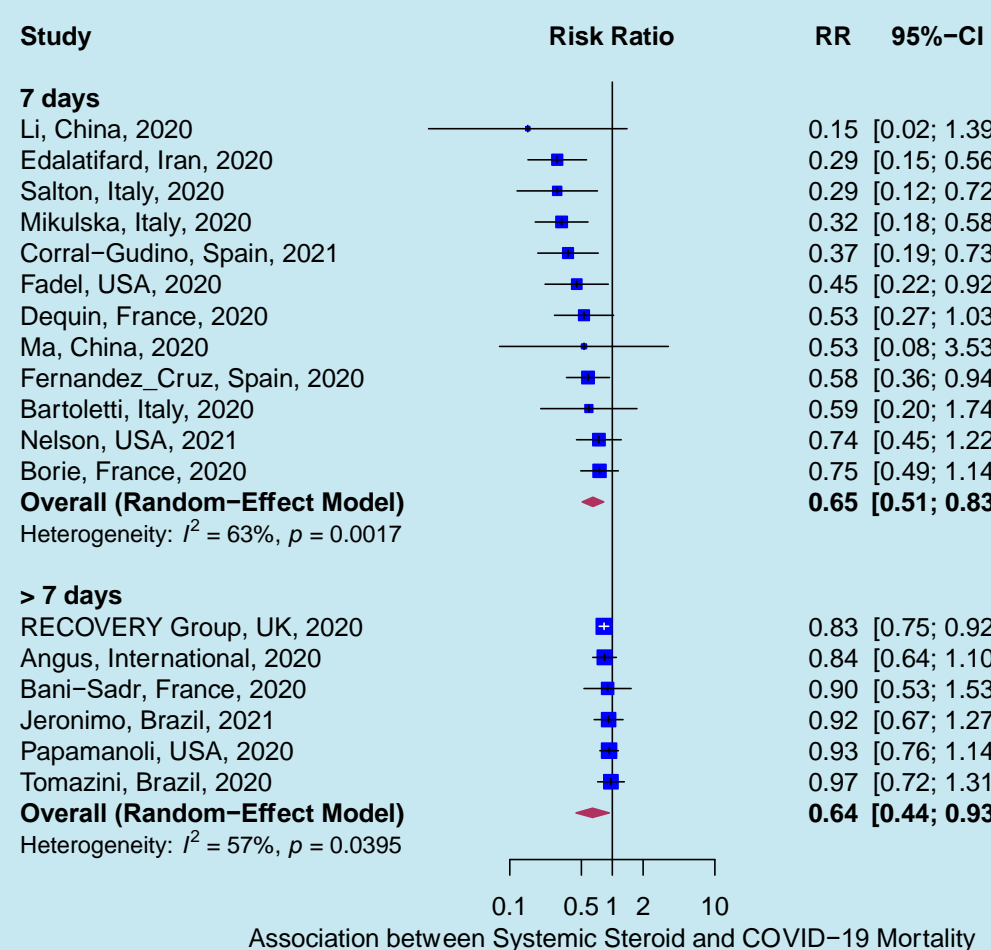
Multiple Electronic databases were searched from the dates of December 2019 to March 2022 for randomized controlled trials and observational cohort studies reporting corticosteroid versus no corticosteroid treatment in hospitalized COVID-19 patients. Risk of bias was assessed using the Cochrane Risk of Bias tool (randomized controlled trials) or the Newcastle Ottawa Scale (observational studies).

The effect of corticosteroids on mortality was estimated by random-effects meta-analyses using the generic inverse variance method. Subgroup analyses and meta-analyses were conducted to assess the optimal duration of corticosteroid treatment.

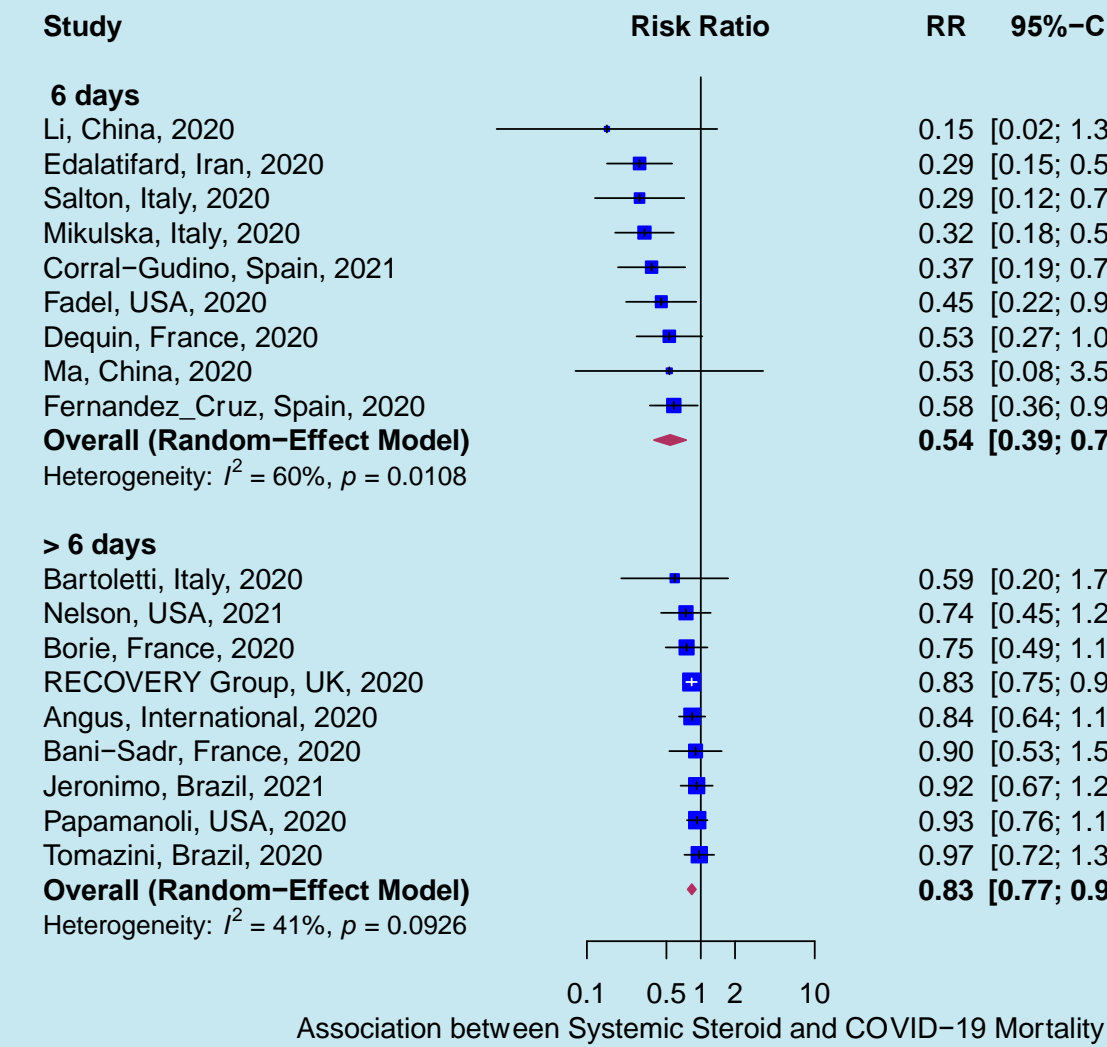
Results



29% mortality reduction in the steroids group



No additional survival benefit was observed beyond 7 days of treatment

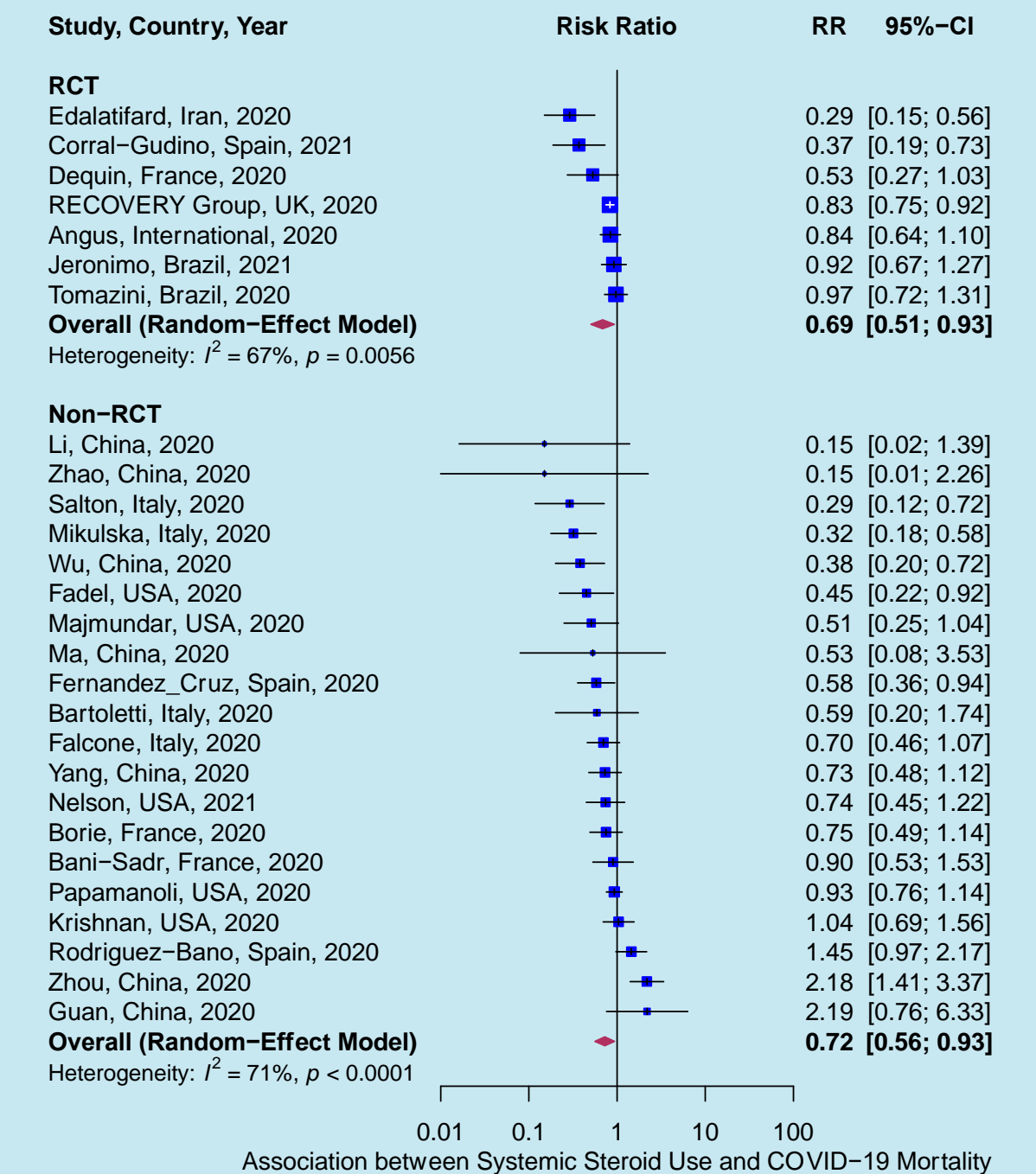


Greatest survival benefit is treatment duration up to 6 days

Discussion

This meta-analysis of 27 studies (7 RCT and 20 observational studies) supports the positive impact of administration of corticosteroids on mortality in hospitalized patients with COVID-19.

This meta-analysis suggests that the optimal duration of systemic steroid use in severe COVID-19 infection is limited to less than 7 days. By shortening the duration of systemic steroids in COVID-19 patients, we may be able to optimize benefit and minimize the risk of side effects.



Study design did not affect survival benefit

Conclusions

In this meta-analysis, the optimal duration of corticosteroid treatment for hospitalized COVID-19 patients was up to 6 days, with no additional survival benefit with > 7 days of treatment. Future analyses should stratify survival benefit by baseline disease severity to see if subgroups of patients derive greater benefit from longer courses of steroids.