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European Journal of Internal Medicine

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Letter to the Editor



Colchicine for the prevention of COVID-19 “hard” outcomes: All that glitters is not gold

Dear Editor,

In a paper recently published in the European Journal of Internal Medicine, Schattner provided a thorough and in-depth review regarding the multiple, pleiotropic effects of colchicine, also highlighting its potential beneficial effects in coronavirus disease 2019 (COVID-19) [1]. In their commentary, Kow et al. [2] emphasize on the need for further trials with a longer treatment duration for the assessment of colchicine's therapeutic efficacy, dampening the initial enthusiasm. Previous meta-analyses of observational studies and randomized controlled trials demonstrated a mortality benefit with colchicine in patients with COVID-19, leading to the amendment of treatment protocols against the disease worldwide [3,4].

Upon the recent publication of further randomized controlled trials, we sought to determine whether colchicine compared to standard of care offers a true benefit, both in the in-hospital and out of hospital setting, for the prevention of surrogate COVID-19 outcomes. We searched PubMed and Cochrane Library databases for relevant published randomized controlled trials up to 12th November 2021. We set as primary efficacy outcome the surrogate endpoint of COVID-19 death and as secondary efficacy outcome that of mechanical ventilation. We extracted the data from the eligible reports, by using a pilot tested, data extraction form.

As we assessed only dichotomous variables, differences were calculated with the use of risk ratios (RR), with 95% confidence interval (CI), after implementation of the Mantel-Haenszel (M-H) random effects

formula. Statistical heterogeneity among studies was assessed by using I^2 statistics. All analyses were performed at the 0.05 significance level, while they were undertaken with RevMan 5.3 software.

We finally included 6 randomized controlled trials [5–10] in a total of 15,624 subjects with documented COVID-19 infection. All trials except for one [8] enrolled hospitalized patients. As shown in Fig. 1, colchicine was not superior to standard of care in terms of prevention of COVID-19 death (RR = 0.63, 95% CI; 0.33 – 1.20, $I^2 = 28\%$). In addition, colchicine did not result in a significant decrease in the risk for mechanical ventilation during disease course (RR = 0.66, 95% CI; 0.36 – 1.20, $I^2 = 48\%$), as shown in Fig. 2.

The present pooled analysis of relevant, published randomized controlled trials so far does not support the routine use of colchicine for the prevention of surrogate COVID-19 outcomes in daily clinical practice, either in the in-hospital or in the community therapeutic management of patients with COVID-19. Whether colchicine can positively affect the prognosis of COVID-19 in specific patients' populations, such as those suffering from autoinflammatory diseases [11], has to be further confirmed in randomized controlled trials, besides hypothesis-generating observational studies.

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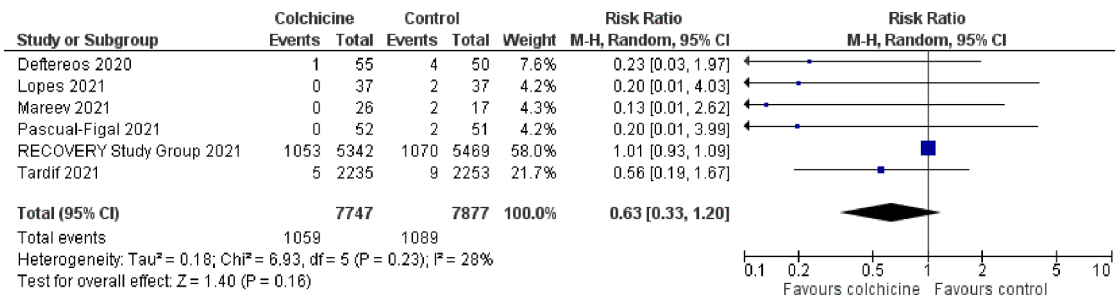


Fig. 1. Effect of colchicine compared to control on the risk for COVID-19 death.

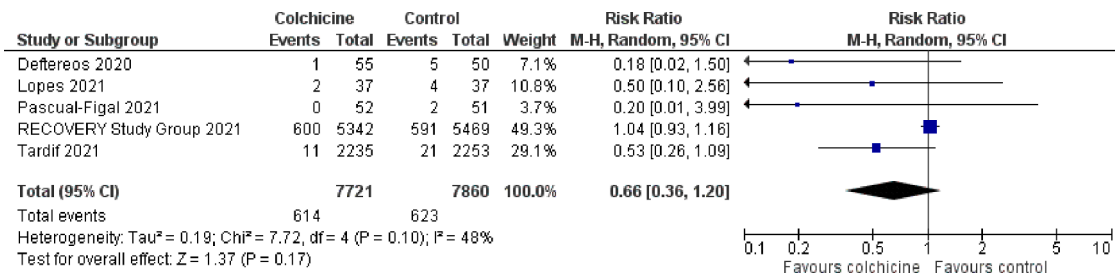


Fig. 2. Effect of colchicine compared to control on the risk for mechanical ventilation due to COVID-19.

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None.

Declaration of Competing Interest

None declared.

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