

# Methylprednisolone Decrease In - Hospital Mortality in Patients with COVID-19 Pneumonia

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## 1. Short Communication

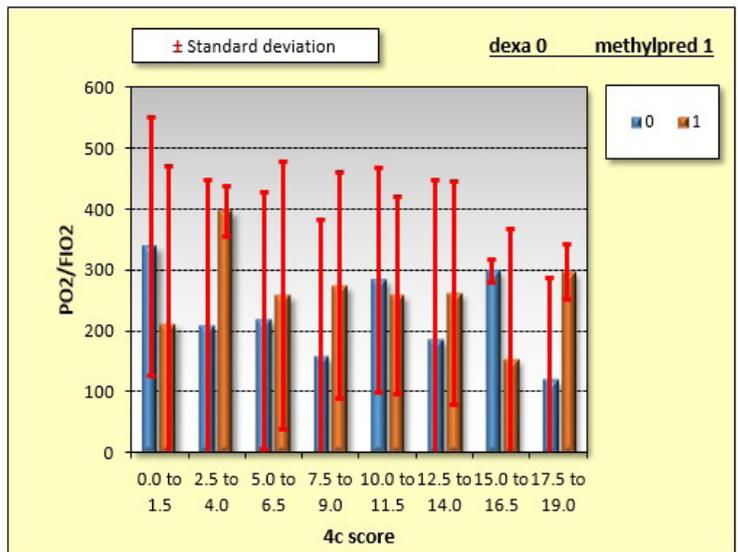
Acute respiratory distress can occur in patients with COVID-19 disease due to viral replication of SARS-COV-2 and an uncontrolled immune inflammatory reaction. We compared the efficacy of intravenous methylprednisolone and intravenous dexamethasone on mortality rate in severe COVID-19 patients with pneumonia and hypoxemia using the new 4C mortality score on admission and on discharge [1]. We selected 60 retrospective files and divided them into two groups of 30 patients each who had received either methylprednisolone 40 mg twice daily for 10 days or dexamethasone 6 mg once daily, for 10 days. The remaining treatment included vitamin D 1000 IU bid, and Enoxaparin 1mg/kg bid. C-reactive protein (CRP), ferritin, Fibrinogen, D-Dimers, SpO2 and (PaO2/FiO2) ratio were measured.

## 2. Results

Mean age was 64±13. 60% were male, 70% were Arabs. Patients with clinical improvement (WHO questionnaire, score 0-8) were higher in the methylprednisolone group than in the dexamethasone group (90 % versus 60%, P<0.001), and the mortality rate was lower in the methylprednisolone group (7% versus 32%; p <0.001). The 4C mortality score was considerably lower (score 0-8, falling within the low-intermediate risk groups (P<0.001) at discharge in the methylprednisolone group as well as improvement in SpO2 (>92%, p<0.05), and in (PaO2/FiO2 >300) ratio, 71% Vs 56% p<0.01) as compared to dexamethasone group. The delta changes in CRP, d-dimers, fibrinogen and ferritin were similar in both groups. Two patients in each group (6% and 7% respectively) showed moderate adverse events

## 3. Conclusion

Methylprednisolone is more effective in improving the 4C mortality score and in improving the (PaO2/FiO2) ratio in severe COVID-19 disease than dexamethasone. Its penetration to the lung tissue may be different. This may support clinical management decisions and early escalation to critical care if appropriate.”



**Figure 1:** Correlation between PaO2 /FiO2 ratio and severity of covid-19 pneumonia treated with dexamethasone versus methylprednisolone

## References

1. Knight SR, Ho A, Pius R, Buchan I, Carson G, Drake TM, Dunning J et al. ISARIC4C investigators. Risk stratification of patients admitted to hospital with covid-19 using the ISARIC WHO Clinical Characterization Protocol: development and validation of the 4C Mortality Score. BMJ. 2020; 370: m3339. doi: 10.1136/bmj.m3339.