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Introduction:
Background: The pharmacological treatment options for acute respiratory distress syndrome are limited. The use of corticosteroid remains controversial. In this study, we aimed to analyze the effect of corticosteroid regarding its efficacy and safety.
Objectives: The primary outcome of this study was to assess the mortality benefit in corticosteroid group. The secondary outcomes were improvement of lung function, ventilator day and nosocomial infection rate.

Methods:
PubMed, Medline-Ovid, Scopus and EMBASE data searching were conducted. Additional searching was also performed by reviewing of relevant primary literatures and review articles. Randomized controlled trials and cohort studies which reported the mortality associated with corticosteroid treatment were selected. A random effect model was used to estimate mortality and other outcomes.

Results:
Of the 1,254 initially reviewed studies, 20 were selected for this meta-analysis. There was no statistically significant decrease mortality in corticosteroid group (95% CI: 0.53, 1.11). Heterogeneity was observed with I² = 69%, df= 17 (P<0.00001). Corticosteroid group showed improvement of lung function regarding PaO2/FiO2 ratio (95% CI: 19.60, 73.74). However, there was no significant difference in ventilator day (95% CI: -4.56, 0.27) In terms of safety, the corticosteroid group had found no evidence of significant increase in nosocomial infection (95% CI: 1.00, 1.87).

Conclusion:
This meta-analysis concluded that corticosteroid treatment in ARDS provided no benefit in decreasing mortality. In addition, this treatment was not associated with increasing risk of nosocomial infection.

References:

Image 1:
Forest plot showed effect of steroid on mortality

Image 2:
Forest plot showed incidence of nosocomial infection