Introduction:
Patients with influenza infection could develop acute respiratory failure and ultimately ARDS. Corticosteroids have been broadly used as immunomodulatory despite lack of evidence supporting its effect in patients with influenza infection. Therefore, our aim was to determine the clinical predictors associated with corticosteroid administration and its association with ICU mortality

Methods:
This is a secondary analysis of a prospective cohort study of critically ill patients with confirmed influenza pneumonia admitted to 148 ICUs in Spain, between June 2009 and April 2014. Patients were stratified according to treatment with systemic corticosteroids when administrated within the first 24-hours of hospital admission. We use a propensity-score matching(PSM) analysis to reduce confounding factors and association of the administration of corticosteroids. Primary outcome was ICU mortality. Cox proportional hazard analysis was performed to investigate the association between baseline characteristics and steroid use and used ICU mortality as the dependent variable

Results:
The total population comprised 1,846 patients with H1N1 pneumonia, corticosteroids were administered in 604 (32.7%) patients, being methylprednisolone the most frequently used medication(578/604 [95.7%]). The median daily dose was equivalent to 80 mg(IQR60-120) for a median duration of 7 days(IQR 5-10). Asthma, COPD, hematological disease and requirement of mechanical ventilation were independently associated with corticosteroid use(p<0.05). After adjusting with PSM, patients with H1N1 pneumonia who received corticosteroids had a higher ICU mortality(27.5%vs.18.8%, HR 1.44,1.18-1.76, p=0.005) compared to patients not treated with corticosteroids(Figure)

Conclusion:
Administration of corticosteroids in patients with severe influenza pneumonia was associated with an increased ICU mortality. Thus, we advocate caution to physician using these medications for influenza pneumonia

References:
Figure: Cox hazard Regression analysis