Introduction:
In-hospital cardiac arrest is associated with poor outcomes. Although steroids are frequently used in patients with septic shock, it is unclear whether they are beneficial during cardiac arrest and after return of spontaneous circulation (ROSC).

Methods:
Of 369 cardiac arrest patients evaluated, 100 were enrolled. Advanced life support was conducted according to the 2015 resuscitation guidelines. Forty-six patients were randomly assigned to receive methylprednisolone 40 mg during resuscitation, and 54 to receive saline (placebo). After resuscitation, steroid-treated patients received hydrocortisone 240 mg daily for up to 7 days, followed by tapering over the next 2 days. Primary outcomes were mean arterial blood pressure and central venous oxygen saturation (ScvO₂) at 20 minutes, 4, 24, 48 and 72 hours after ROSC. Secondary end-points included left ventricular ejection fraction and eccentricity index at 12 and 72 hours, cardiac output and serum cytokine levels at 4, 24, 48 and 72 hours, cerebral blood flow index at 4 and 72 hours after ROSC, organ failure–free days from follow-up day 1 through 60, neurological status at discharge and steroid-associated complications.

Results:
Post-resuscitation MAP did not differ significantly between steroid- and placebo-group at any time point (20 min: 85.2±21.3 vs. 84.7±21.4; 4h: 83.9±18.1 vs. 78.9±15.9; 24h: 79.9±16.0 vs. 81.9±15.2; 48h: 80.2±10.0 vs. 84.2±13.6; 72h: 85.2±11.6 vs. 84.7±14.5 (p>0.05 for all comparisons). There was no significant difference between the two groups in ScvO₂ and all the secondary outcomes (p>0.05 for all comparisons).

Conclusion:
The present study found no significant physiologic benefit of corticosteroid administration during and after resuscitation in hospitalized patients with cardiac arrest.