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## Poster Presentation

### Salutary Effects of Progesterone for Traumatic Brain Injury

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#### Abstract

The sex hormone progesterone has been shown to improve outcomes in animal models and two early-phase trials involving patients with traumatic brain injury (TBI). The aim of this clinical study was to assess the effect of progesterone on the improvement of neurologic outcome in patients with diffuse and acute TBI. A prospective, randomized, double-blind trial of progesterone was conducted in our teaching hospital. A total of 50 patients with diffuse acute TBI who arrived within 4 hours of injury with a Glasgow Coma Score  $\leq 12$  were enrolled in the study. In a randomized style, 25 received progesterone (1 mg/kg per 12 h for 5 days) and 25 did not. The primary efficacy endpoint was the Glasgow Outcome Scale score 3 months after brain injury. Secondary efficacy endpoint included the mortality. The demographic characteristics and the mechanism of injury were similar for the two groups. After 3 months of treatment, the Glasgow Outcome Scale score analysis exhibited more favorable outcome among the patients who were given progesterone compared with the control individuals ( $P=0.05$ ). The mortality rate of the control group was 20.8%, whereas any of patients in progesterone group did not die. Instances of complications and adverse events associated with the administration of progesterone were not found in any of patients. Our data suggest that the administration of progesterone for diffuse and acute TBI patients improved neurologic outcomes and reduced mortality. These results indicate that progesterone can be considered as a promising neuroprotective drug.

**Keywords:** Traumatic Brain Injury, Progesterone, Glasgow Outcome Scale.

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