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Pill ingredient could prevent brain damage after head injury

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A common component of the contraceptive pill (progesterone) could improve the neurologic outcome for patients with severe head injuries, according to a study published in BioMed Central's open access journal *Critical Care*.

Traumatic brain injury (TBI), such as that caused by traffic accidents, falls and sporting injuries, is a major cause of death and disability. A number of 'neuroprotective' drugs have been shown to prevent nerve-cell death in animal models of traumatic brain injury, but these findings have not been translated into trials involving people with head injuries.

Progesterone is a female hormone used in the oral contraceptive pill. Preliminary animal and human studies suggest that progesterone could be a useful and safe way to treat acute severe traumatic brain injury, but its neuroprotective effects are unclear. Now, Chinese researchers have shown that progesterone can improve the neurologic outcome of patients with this kind of brain injury for up to six months.

A research team from Hangzhou Normal University and Zhejiang University in Hangzhou, supervised by Professor Weiqi Yan, studied 159 patients with acute traumatic brain injury admitted to a single hospital. In this randomized, double-blinded trial approximately half the patients received progesterone and the other half placebo for five days after brain injury.

"Although previous studies in animal suggest that progesterone may

mitigate the severity of brain damage, there is no information about therapeutic benefit of post-TBI progesterone injections in the patients with severe brain trauma" said Professor Yan. "Our work was to determine if progesterone improve chances for recovery in patients with severe injuries in a longer-term".

Patient outcomes were classified either as favourable (good recovery or moderate disability) or unfavourable (severe disability, vegetative state or death). Neurological outcomes were measured using the Glasgow Outcome Scale, a medical system for evaluating the functional outcome of patients.

At both three and six months after treatment, significantly more patients given progesterone had favourable outcomes compared to patients given placebo. Progesterone was also linked to increased survival at six months. No complications or adverse events were seen in the patients given progesterone.

"We found encouraging evidence that progesterone may significantly improve 6-month neurologic outcome of the patients who were enrolled with acute severe TBI" according to lead author, Dr Giomin Xiao. "Our results provide information important for further multicenter clinical trials on progesterone as a promising neuroprotective drug".

Source: BioMed Central