Doctors find the first effective treatment to calm delirious critically ill patients

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Delirium with agitation is very common in intensive care patients.

Critically ill patients in intensive care commonly become delirious and agitated during treatment, causing them to pull out breathing tubes and interfere with other essential medical devices.

Now a study led by The University of Queensland has shown that patient delirium and agitation can be reduced by administering a little-used drug known as dexmedetomidine.

The study involved 15 hospitals across Australia and New Zealand and

was led by UQ's Professor Michael Reade, who is Australian Defence Force Chair of Military Medicine and Surgery, and a member of the Burns, Trauma and Critical Care Research Centre.

Professor Reade said the trial of dexmedetomidine showed promising results in the intensive care setting by helping patients to remain calm and reducing the time spent deeply sedated with breathing tubes inserted (a practice called mechanical ventilation).

"The intensive care environment and treatments required to keep a critically ill patient alive can be extremely stressful for patients, particularly when there is a need for us to insert tubes into their airways to have a ventilator breathe for them," Professor Reade said.

"Delirium with agitation is very common in intensive care patients, causing them to become disorientated and distressed.

"The condition is associated with increased mortality, decreased long-term cognitive function similar to mild dementia, and post-traumatic stress disorder."

The researcher said that dexmedetomidine's sedative effects were known before the trial, but its effectiveness for treating agitated delirium in patients had not been understood.

"We showed that by adding dexmedetomidine to standard care, we were able to keep our critically ill patients calmer and more comfortable, helping their delirium to recover faster, and allowing clinicians to remove mechanical ventilation a day earlier on average.

"With each day on mechanical ventilation costing our health system about twenty times the daily cost of dexmedetomidine, this drug has the potential to benefit individual patients and reduce the cost to the whole

health system."

Professor Reade said the outcomes of the trial would have particular significance for military patients critically wounded in action.

"As the Australian Defence Force Chair of Military Medicine and Surgery, my mission is to lead research that will benefit our men and women on the frontline and ensure modern trauma care is implemented into practice within the Defence Force," he said.

"The results of this trial have real significance for our military patients who are severely wounded in action – the use of dexmedetomidine for our most critically ill troops should help get them out of intensive care and back to their loved ones earlier, and with reduced likelihood of ongoing traumatic stress."

The clinical trial was partly funded by Hospira, the company that manufactures dexmedetomidine.

"We're very grateful to Hospira for supporting our research and emphasise that this a great example of an academic-industry partnership to improve patient care," Professor Reade said.

"The trial investigators have no relationship with the manufacturer, and the company has had no access to the data or influence on the final manuscript.

"Nonetheless, as Hospira stands to derive some benefit, it was appropriate that it shares some of the trial's cost."

The study is published in the *Journal of the American Medical Association* and was presented at the International Symposium on Intensive Care and Emergency Medicine, held in Brussels.

More information: Michael C. Reade et al. Effect of Dexmedetomidine Added to Standard Care on Ventilator-Free Time in Patients With Agitated Delirium, *JAMA* (2016). DOI: 10.1001/jama.2016.2707

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