



Delirium: What is the impact on treatment following stroke and how can we predict it?

Presenter: Damian Johnson

Authors: D Johnson, E Maylin, L Hayes, C Hair, A Brodtmann, T Kraemer, M Lau, M Parsons, V Thijs, R Sahathevan

29 November 2018



Ballarat **Health** Services
Putting your health first

Background & Objectives



Background:

- Delirium is a neglected, yet common, complication of stroke.
- While there is clear evidence that delirium negatively impacts mortality and morbidity in stroke survivors, it is unknown how it affects participation in Allied Health , which are aimed at regaining and improving functional ability following a stroke.

Aims:

1. To undertake a literature review to determine the impact of delirium on participation in allied health interventions.
2. To conduct an external validation of a delirium prediction tool (DPT) in an acute stroke population as developed by Oldenbeuving et al. ⁽¹⁾



Literature Review



Study design:

- Systematic review of the impact of delirium on post-stroke rehabilitation initially undertaken
- Due to a lack of publications in this population, the search was expanded to include all admission types.

Results:

- The literature review identified two articles that both suggested that delirium negatively impacts participation in allied health interventions. (2,3)

Where to from here?

- The literature review has identified an area of need for further research, to improve our understanding of the interplay between a common complication and a key management aspect following acute stroke.
- This review was presented at the European Stroke Organisation Conference held in Gothenburg, Sweden in May 2018. (4)
- The review has been submitted and is currently awaiting review for publication in *Neuroepidemiology*



Literature Review



Study design:

- External validation of the study conducted by Oldenbeuving et al (2014).
- Currently being conducted at Ballarat Health Services and Austin Health
- Aims to involve Royal Melbourne Hospital and St Vincent's Hospital in the coming months

Results:

- The clinical study has so far only been running for a few months
- Too early in the process to have statistically significant results

Where to from here?

- If the prediction tool is found to reliably predict risk of delirium, it could be incorporated into standard stroke care, allowing for interventions to minimise the risk and impact of delirium.



A systematic review of stroke, delirium & allied health interventions; AN EXERCISE IN FUTILITY!

Damian Johnson¹, Erin Maylin¹, Casey Hair¹, Thomas Kraemer¹, Mandy Lau¹, Ramesh Sahathevan^{1,2,3}
¹ Department of Internal Medicine, Ballarat Health Services, Australia
² Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne, Victoria, Australia,
³ Florey Institute of Neuroscience and Mental Health, Melbourne, Victoria, Australia

Background

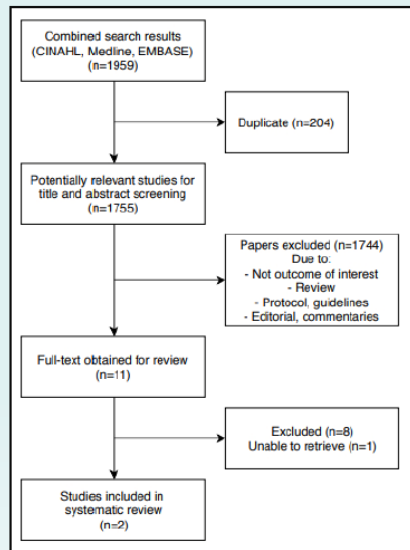
Delirium is a neglected complication of stroke, affecting 10-48% of acute stroke patients. It manifests clinically as a fluctuation in the level of consciousness and poor attention.

There is clear evidence that delirium negatively impacts mortality and morbidity in stroke survivors. In contrast to this, Allied Health interventions, a mainstay of acute post-stroke care, help to regain and improve functional ability following a stroke.

We conducted a systematic review of available literature. We sought to determine the influence, if any, of delirium on the ability of stroke patients to participate in allied health interventions and the impact this might have on recovery.

Methods

We initially planned a systematic review to determine the impact of delirium on post-stroke rehabilitation. However, there was a surprising lack of published research. We then expanded our search to include studies that assessed the impact of delirium on rehabilitation irrespective of the underlying diagnosis. The result of our search is shown in the figure below.



References
 1. Oldenbeuving AW, de Kort PLM, van Eck van der Sluijs JF, Kappelle LJ, Roks G: An early prediction of delirium in the acute phase after stroke. J Neurol Neurosurg Psychiatry 2014;85:431-434.
 2. Tekin L: Clinical Consultation Clinical Consultation : Delirium : A Critical Diagnosis for Every Member of the Rehabilitation 2008;1999-2000.
 3. Kamdar BB, Combs MP, Colantuoni E, King LM, Niessen T, Neufeld KJ, et al.: The association of sleep quality, delirium, and sedation status with daily participation in physical therapy in the ICU. Crit Care 2016;20:1-9.
 4. Johnson, D., Maylin, C., Hair, C., Kraemer, T., Lau, M. & Sahathevan R. (2018, May) A systematic review of stroke, delirium & allied health interventions; An Exercise In Futility! Poster presented at European Stroke Organisation Conference 2018, Gothenburg, Sweden.

Results

Only two papers out of 1959 returned in our systematic search of the literature addressed the impact of delirium on participation in allied health interventions.

One of these was a case report and the other an ICU based study. Both reported a significant reduction in participation in allied health interventions in delirious patients.

A number of studies explored the impact of delirium on patient outcomes such as morbidity and mortality, but there were no articles, other than the two mentioned, that dealt specifically with the effect of delirium on participation in allied health interventions.

There is no published research that specifically addresses the impact of delirium on post-stroke rehabilitation.

Discussion

Our review highlights a significant lack of research regarding the impact of delirium on the ability to participate in allied health interventions. Of particular importance is the lack of research amongst stroke patients. Intuitively, we would assume that delirium negatively impacts on participation in any form of standard care, there is a need for clear evidence either way.

The field of stroke care is long overdue for a well designed prospective study which looks specifically at the impact of delirium on a stroke patient's ability to participate across all aspects of allied health interventions.

The impetus for such research would include the significant cost of stroke and delirium, the importance of allied health interventions to a patient's overall recovery and the potential benefit to patients, carers and health systems.



References

1. Oldenbeuving AW, de Kort PLM, van Eck van der Sluijs JF, Kappelle LJ, Roks G: An early prediction of delirium in the acute phase after stroke. J Neurol Neurosurg Psychiatry 2014;85:431-434.
2. Tekin L: Clinical Consultation Clinical Consultation : Delirium : A Critical Diagnosis for Every Member of the Rehabilitation 2008;1999-2000.
3. Kamdar BB, Combs MP, Colantuoni E, King LM, Niessen T, Neufeld KJ, et al.: The association of sleep quality, delirium, and sedation status with daily participation in physical therapy in the ICU. Crit Care 2016;20:1-9.
4. Johnson, D., Maylin, C., Hair, C., Kraemer, T., Lau, M. & Sahathevan R. (2018, May) A systematic review of stroke, delirium & allied health interventions; An Exercise In Futility! Poster presented at European Stroke Organisation Conference 2018, Gothenburg, Sweden.

Thank You!



Ballarat Health Services
Putting your health first

Poster Presented at European Stroke Organisation Conference 2018, in Gothenburg, Sweden.

Literature Review currently submitted and under review for publication in *Neuroepidemiology*